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1 ARIZONA WATER COMPANY
2 Robert W. Geake (No. 009695)
3 Vice President and General Counsel
4 3805 N. Black Canyon Highway
5 Phoenix, Arizona 85012-5351
6 Telephone: (602) 240-6860

7 FENNEMORE CRAIG, P.C.
8 A Professional Corporation
9 Norman D. James (No. 006901)
10 Jay L. Shapiro (No. 014650)
11 3003 North Central Avenue
12 Suite 2600
13 Phoenix, Arizona 85012-2913
14 Telephone: (602) 916-5000

15 Attorneys for Applicant Arizona Water
16 Company

Arizona Corporation Commission

DOCKETED

OCT 16 2009

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BEFORE THE ARIZONA CORPORATION COMMISSION

DOCKET NO. W-01445A-08-0440

13 IN THE MATTER OF THE APPLICATION
14 OF ARIZONA WATER COMPANY, AN
15 ARIZONA CORPORATION, FOR A
16 DETERMINATION OF THE FAIR VALUE
17 OF ITS UTILITY PLANT AND PROPERTY,
18 AND FOR ADJUSTMENTS TO ITS RATES
19 AND CHARGES FOR UTILITY SERVICE
20 AND FOR CERTAIN RELATED
21 APPROVALS BASED THEREON.

ARIZONA WATER COMPANY'S

CLOSING BRIEF

TABLE OF CONTENTS

		Page
1		
2		
3	I. INTRODUCTION: OVERVIEW OF ARIZONA WATER COMPANY	
4	AND THE RELIEF REQUESTED IN THIS PROCEEDING.....	1
5	A. The Company's Application and Requested Rate Increases	1
6	B. The Company's Previous Rate Decisions and Changes in the	
7	Company's Investment and Earnings Since Current Rates Were Set	3
8	C. The Company's Test Year Operating Results and the Continued	
9	Erosion of Its Earnings.....	6
10	II. RATE BASE	8
11	A. Working Capital: The Inclusion of Quarterly Dividend Payments in	
12	the Lead/Lag Study is Balanced and Reasonable	10
13	B. Utility Plant in Service - Issues in Dispute	12
14	1. Brief Overview	12
15	2. Plant in Use	12
16	3. Plant to Be Retired	14
17	4. Post Test Year Plant.....	15
18	a. Sedona System – Well No. 13 (Valley Vista well)	16
19	b. Highway 179 Project	17
20	c. Pinewood Electrical Panel	18
21	5. Plant Held for Future Use	19
22	a. There Are Many Jurisdictions that Include Plant Held	
23	for Future Use in Rate Base.....	19
24	b. Arguments for Rate Base Treatment	22
25	6. RUCO's Adjustment for CWIP Is Confiscatory	23
26	III. REVENUE AND OPERATING INCOME.....	23
	A. The Expense Normalizations Recommended by Staff and RUCO Are	
	Not Supported by Substantial Evidence and Should Be Rejected.....	23
	1. RUCO's Normalization of Labor Expense Is Not Known and	
	Measurable, nor Is it Supported by Substantial Evidence	25
	2. Staff's Normalization of Transmission and Distribution	
	Expenses Is Not Supported by Substantial Evidence	26
	3. Staff's Proposal to Replace the Company's Long-Standing	
	Tank Maintenance Program with a "Normalized" Expense	
	Level Should Be Rejected.....	26
	4. Staff's Recommendation to Normalize the Desert Pump	
	Station Maintenance Expense Is Unnecessary and Risky	29

TABLE OF CONTENTS
(continued)

		Page
1		
2		
3	B. Staff's Recommended CIAC Amortization Should Not Be Adopted	30
4	C. RUCO's Opposition to Requested Rate Case Expense Is Unsupported.....	31
5	D. Adjuster Mechanisms Are a Well Established Ratemaking Tool and Use of Such Mechanisms Is Warranted at this Time.....	33
6	IV. COST OF CAPITAL AND RATE OF RETURN	36
7	A. Introduction.....	36
8	B. The Applicable Legal Standard	37
9	C. The Company's Cost of Equity Is Reasonable and Should be Adopted.....	39
10	D. The Methods Used by Dr. Zepp Are Appropriate and Should be Adopted in this Case	43
11	1. Summary of Dr. Zepp's Cost of Equity Estimates	43
12	2. The Cost of Equity Produced by Staff's Normal Methods Indicates that the Cost of Equity Is 11.2%	46
13	3. Summary of the Erroneous Inputs and Methods Used by Mr. Parcell and Mr. Rigsby	49
14	E. The Parties Choice of Sample Utilities.....	52
15	1. The Parties' Water Utility Sample Groups.....	52
16	2. RUCO's Gas Utility Sample Group	54
17	F. The Improper Use of a Geometric Mean to Estimate the Cost of Equity	58
18	G. Mr. Parcell and Mr. Rigsby Have Ignored Current Market Risk in Their CAPM Estimates	62
19	H. Mr. Parcell and Mr. Rigsby Improperly Use Total Returns Rather Than Income Returns in the CAPM	67
20	I. The Commission Has Previously Rejected the Comparable Earnings Approach.....	69
21	J. The Company's Cost of Equity Should Be Adjusted Upward to Reflect the Company's Additional Risk	70
22	V. RATE DESIGN AND CONSOLIDATION	74
23	A. Consolidation of Company Systems for Ratemaking Purposes	74
24	1. The Company's Rate Consolidation Proposal	74
25	2. Staff's Consolidation Proposal	77
26	3. RUCO's Multi-Tariff Pricing Proposal Should Be Rejected	80
	B. Rate Design Issues	84

TABLE OF CONTENTS
(continued)

	Page
1. Summary of Arizona Water's Rate Design Recommendation	84
2. Staff's Proposed Rate Design Is Flawed and Should Be Rejected	86
a. Staff's Proposed Industrial Class Rate Increase	86
b. Staff's Inverted Block Rate Design for the Industrial Class Is Not Necessary	87
c. Staff's Proposed Increase In the Revenue Collected Through the Commodity Rates and Its Spread Between the Commodity Rate Blocks Are Excessive	88
d. Other Issues	90
C. An Adjustment Is Necessary to Account for the Imposition of Inverted Block Rates for the Northern Group Systems	91
VI. OTHER ISSUES	95
A. Non-Account Water	95
1. The Company's Water Loss Management Program	95
2. What is "Acceptable" Non-Account Water?	97
3. Staff's Recommended "Corrected Measures" Are Unnecessary ...	103
B. Best Management Practices	105

**ARIZONA WATER COMPANY, INC.
PRE-FILED TESTIMONY**

	Pre-Filed Testimony	Hearing Exhibit
1		
2		
3	Direct Testimony of	A-1
4	William M. Garfield	
5	Rebuttal Testimony of	A-2
6	William M. Garfield	
7	Rebuttal Testimony of	A-3
8	William M. Garfield	
9	(Rate Design and Cost of Service)	
10	Rejoinder Testimony	A-4
11	of William M. Garfield	
12	Direct Testimony	A-5
13	of Joseph D. Harris	
14	Rebuttal Testimony	A-6
15	of Joseph D. Harris	
16	Rejoinder Testimony	A-7
17	of Joseph D. Harris	
18	(Rate Design and Cost of Service)	
19	Rejoinder Testimony	A-8
20	of Joseph D. Harris	
21	(Rate Design and Cost of Service)	
22	Direct Testimony	A-9
23	of Fredrick K. Schneider	
24	Rebuttal Testimony	A-10
25	of Fredrick K. Schneider	
26	Rejoinder Testimony	A-11
	of Fredrick K. Schneider	
	Direct Testimony	A-18
	of Joel M. Reiker	
	Rebuttal Testimony	A-20
	of Joel M. Reiker	
	Rebuttal Testimony	A-21
	of Joel M. Reiker	
	(Rate Design and Cost of Service)	
	Rejoinder Testimony	A-22
	of Joel M. Reiker	
	Rejoinder Testimony	A-23
	of Joel M. Reiker	
	(Rate Design and Cost of Service)	

1	Direct Testimony of Thomas M. Zepp	A-41
2	Rebuttal Testimony of Thomas M. Zepp	A-42
3	Rejoinder Testimony of Tomas M. Zepp	A-43

**RESIDENTIAL UTILITY CONSUMER OFFICE
PRE-FILED TESTIMONY**

7	Pre-Filed Testimony	Hearing Exhibit
8	Direct Testimony of Rodney Moore	R-16
9	Surrebuttal Testimony of Rodney Moore	R-17
10	Direct Testimony of Timothy J. Coley	R-18
11	Surrebuttal Testimony of Timothy J. Coley	R-19
12	Direct Testimony of William Rigsby (Revenue Requirement)	R-27
13	Surrebuttal Testimony of William Rigsby (Revenue Requirement)	R-28
14	Direct Testimony of William Rigsby (Cost of Capital)	R-32
15	Surrebuttal Testimony of William Rigsby (Cost of Capital)	R-33
16	Surrebuttal Testimony of Jodi Jerich	R-35
17	Errata to Surrebuttal Testimony of Jodi Jerich	R-36

24
25
26

**ARIZONA CORPORATION COMMISSION STAFF
PRE-FILED TESTIMONY**

	Pre-Filed Testimony	Hearing Exhibit
1		
2		
3	Direct Testimony	S-10
4	of Steve Olea	
5	Direct Testimony	S-12
6	of Elijah Abinah	
7	Direct Testimony	S-13
8	of Katrin Stukov	
9	Surrebuttal Testimony	S-14
10	of Katrin Stukov	
11	Direct Testimony	S-15
12	of Brian Bozzo	
13	Surrebuttal Testimony	S-16
14	of Brian Bozzo	
15	Direct Testimony	S-22
16	of David C. Parcell	
17	Surrebuttal Testimony	S-23
18	of David C. Parcell	
19	Direct Testimony	S-24
20	of Alexander Igwe	
21	Surrebuttal Testimony	S-25
22	of Alexander Igwe	
23	Direct Testimony	S-26
24	of Jeffrey Michlik	
25	Surrebuttal Testimony	S-27
26	of Jeffrey Michlik	

**ABBOTT LABORATORIES
PRE-FILED TESTIMONY**

	Pre-Filed Testimony	Hearing Exhibit
21	Direct Testimony	Abbott-1
22	of Stephen V. Chasse	
23	Surrebuttal Testimony	Abbott-2
24	of Daniel Neidlinger	
25	Errata to	Abbott-3
26	Surrebuttal Testimony	
	of Daniel Neidlinger	

**IBWE LOCAL 387
PRE-FILED TESTIMONY**

Pre-Filed Testimony

Hearing Exhibit

Direct Testimony
of Edwin L. Junas, Jr.

IBWE-1

Surrebuttal Testimony
of Edwin L. Junas, Jr.

IBWE-2

Corrected Pages to Surrebuttal
Testimony of Edwin L. Junas, Jr.

IBWE-3

1 **I. INTRODUCTION: OVERVIEW OF ARIZONA WATER COMPANY AND**
2 **THE RELIEF REQUESTED IN THIS PROCEEDING**

3 **A. The Company's Application and Requested Rate Increases**

4 On August 22, 2008, Arizona Water Company, an Arizona corporation ("Arizona
5 Water" or "the Company") filed an application for adjustments to its rates and charges for
6 utility service for its 17 water systems utilizing a test year ending December 31, 2007.
7 During the test year in this case, the Company had adjusted operating income of
8 \$5,028,340, which resulted in a return of only 3.47% on its original cost rate base.¹ The
9 Company is seeking an increase in revenue of \$13,533,260 (31.2%) over adjusted test
10 year revenues of \$43,361,490. However, the actual revenue increase requested by the
11 Company is only \$8,121,753 (18.7%) when the revenue produced by the Company's
12 arsenic cost recovery mechanism ("ACRM") and purchased power adjustment mechanism
13 surcharges are taken into account.² The Company's proposed increases (decreases) by
14 system are as follows:

	<u>Current</u> <u>Revenues</u>	<u>Proposed</u> <u>Increase</u>	<u>Current</u> <u>Surcharges</u>	<u>Net</u> <u>Increase</u>	<u>Percentage</u> <u>Increase</u>
16 Superstition	\$11,940,259	\$4,375,050	\$2,474,101	\$1,900,949	15.9%
17 Bisbee	1,723,153	342,838		342,838	19.9%
18 Sierra Vista	1,461,708	9,386		9,386	0.6%
20 San Manuel	812,422	384,649	193,478	191,171	23.5%
21 Oracle	1,126,259	18,513		18,513	1.6%
22 Winkelman	\$98,724	\$30,378	\$	\$30,378	30.8%

24 ¹ Company Final Sch. A-1 at 1.

25 ² Ex. A-23 at 14; Company Final Sch.A-1 at 1. The costs currently being recovered under the
26 ACRM surcharge and the purchased power adjustment mechanism will be recovered in base rates
when new rates are approved in this case.

	<u>Current Revenues</u>	<u>Proposed Increase</u>	<u>Current Surcharges</u>	<u>Net Increase</u>	<u>Percentage Increase</u>
1 Miami	1,850,773	(17,016)		(17,016)	-0.9%
2 Casa Grande	10,934,520	4,854,909	1,902,034	2,952,875	27.0%
3 Stanfield	131,941	10,165	11,382	(1,217)	-0.9%
4 White Tank	1,245,240	318,394	231,069	87,325	7.0%
5 Ajo	471,088	85,229		85,229	18.1%
6 Coolidge	2,214,937	467,580		467,580	21.1%
7 Lakeside	2,588,849	196,768	(35,711)	232,479	9.0%
8 Overgaard	1,685,650	(64,611)	1,550	(63,061)	-3.7%
9 Sedona	3,521,358	2,149,143	390,233	1,758,910	50.0%
10 Pinewood	1,046,742	118,503	7,420	111,083	10.8%
11 Rimrock	<u>507,869</u>	<u>253,382</u>	<u>235,950</u>	<u>17,432</u>	3.4%
12	\$43,361,490	\$13,533,260	\$5,411,507	\$8,121,753	18.7%

13 These increases are designed to produce a rate of return of 9.2% on the Company's
14 original cost rate base of \$144,979,452, which the Company accepts as its fair value rate
15 base in this case.

16 In this case, the Company is also proposing to consolidate several systems as an
17 initial step toward full consolidation of its water systems for ratemaking purposes. The
18 following systems would be fully consolidated (i.e., have the same rates): Superstition
19 and Miami; Lakeside and Overgaard; Pinewood and Rimrock; and Casa Grande and
20 Coolidge. In addition, the following systems would be partially consolidated (i.e., have
21 the same monthly service charge but different commodity rates): Bisbee and Sierra Vista;

1 Sedona and Pinewood/Rimrock; and Casa Grande/Coolidge and Stanfield. The systems
2 that are partially consolidated would be fully consolidated in a future rate case.³

3 The Company is also proposing a uniform inverted block rate design for all of its
4 systems to encourage water conservation. The residential commodity rate for 5/8 x 3/4-
5 inch meters, which comprise nearly 90% of the Company's customers,⁴ would have three
6 inverted commodity rate blocks with break-over points at 3,000 and 10,000 gallons per
7 month.⁵ The rate for the first usage block (0 to 3,000 gallons per month) is set at a 25%
8 discount from the second usage block rate, while the rate for the third usage block (over
9 10,000 gallons per month) is set at a 25% premium over the second usage block rate. The
10 purpose of the initial, discounted rate block (often called a "lifeline" rate) is to provide
11 water for nondiscretionary uses at a reduced cost. Residential customers served by larger
12 meters and commercial customers also would have inverted block commodity rates, with
13 two rate blocks. The break-over point between the two blocks would be scaled upward
14 from 10,000 gallons for residential customers on 1-inch meters and commercial customers
15 on 5/8 x 3/4-inch meters. Finally, industrial customers would have a single commodity
16 rate.

17 **B. The Company's Previous Rate Decisions and Changes in the**
18 **Company's Investment and Earnings Since Current Rates Were Set**

19 This rate case is the first company-wide case that Arizona Water has filed since the
20 early 1990s.⁶ Its current rates and charges were approved by the Arizona Corporation
21 Commission ("the Commission") in three different decisions. The rates charged by the
22 Company's Northern Group systems (Sedona, Pinewood, Rimrock, Lakeside and

23 ³ See Ex. A-5 at 14-16 (explaining the Company's consolidation proposal).

24 ⁴ See Ex. A-21, Ex. JMR-RBEX2 (Sch. RB H-2). During the 2007 test year, the Company served
25 an average of 74,444 residential customers with 5/8 x 3/4-inch meters out of a total average
number of customers of 82,991.

⁵ See Ex. A-18 at 35-36 (describing the Company's proposed rate design).

26 ⁶ See Decision No. 58120 (Dec. 23, 1992).

1 Overgaard) were approved in Decision No. 64282 (Dec. 28, 2001) based on a 1999 test
2 year. Notably, those systems do not have inverted block rates and have purchased power
3 adjustment mechanisms. The rates charged by the Eastern Group systems (Superstition,
4 Miami, Oracle, San Manuel, Winkelman, Sierra Vista and Bisbee) were approved in
5 Decision No. 66849 (March 19, 2004) based on a 2001 test year. Finally, the rates
6 charged by the Western Group systems (Casa Grande, Coolidge, Stanfield, White Tank
7 and Ajo) were approved in Decision No. 68302 (Nov. 14, 2005) based on a 2003 test year.
8 Thus, the Company's current rates have been in effect between four and eight years, and
9 are based on 1999, 2001 and 2003 plant investment and operating expense levels.

10 Much has changed since those rate cases. First, the Company's investment in plant
11 has increased dramatically. The combined rate base of the Northern Group systems has
12 increased by more than \$16 million (nearly 100%) since that group's last rate case.⁷
13 Moreover, the combined rate bases of the Eastern and Western Group systems have
14 increased by more than \$27 million (over 75%) and \$28 million (over 120%),
15 respectively, since those groups' last rate cases.⁸ These increases do not include the
16 Company's additional investment in plant since December 31, 2007, the end of the test
17 year in this case.

18 As a consequence, the Company's invested capital (i.e., debt and equity financing
19 utility plant) has grown substantially. In 2005, Arizona Water's total capital was
20 approximately \$100 million. By the end of the 2007 test year, Arizona Water's total
21 capital had increased to \$143 million, and by December 31, 2008 – the date being used by
22 all of the parties to determine the Company's capital structure and weighted average cost
23 of capital – its total capital had increased to \$152 million.

24 At the same time, the Company's capital structure has changed. In its Eastern

25 ⁷ Ex. A-1 at 5; Ex. A-5 at 3.

26 ⁸ *Id.*

1 Group rate case, the Company's capital structure contained 66% common equity.⁹ In its
2 Western Group rate case, the Company's capital structure contained more than 73%
3 common equity.¹⁰ The capital structure proposed by the Commission's Utilities Division
4 ("Staff"), and accepted by the Company and intervenor Residential Utility Consumer
5 Office ("RUCO"), contains less than 46% common equity.¹¹ Arizona Water now has less
6 equity in its capital structure than the average capital structure of the water utility sample
7 groups used by the parties to estimate the cost of equity, and, as discussed below, its
8 investment risk relative to those utilities has increased as a result.

9 In addition, Arizona Water's operating expenses have increased. For the Northern
10 Group systems, annual expenses have risen by \$2.7 million (50%) since those systems'
11 last rate case.¹² Likewise, annual expenses have risen by \$3.3 million (25%) and \$5.1
12 million (58%) for the Eastern and Western Group systems, respectively, since those
13 systems' last rate cases.¹³ In part, these increases in operating expenses have resulted
14 from a pattern of almost continuous rate filings by Arizona Water's two major power
15 providers, Arizona Public Service Company and Salt River Project, both of whom will
16 increase their rates again within the next six to 10 months.¹⁴

17 In short, the Company's investment in plant needed to ensure safe and reliable
18 service has increased dramatically since its previous rate decisions, while operating
19 expenses have continued to climb. As a result, the Company's rate of return has been
20 steadily eroding, as revenues from water sales have failed to keep pace with investment in
21 plant and increases in operating expenses, even with the rate increases authorized for the
22

23 ⁹ Decision No. 66849 at 16.

24 ¹⁰ Decision No. 68302 at 30.

25 ¹¹ Ex. S-22, Ex. DCP-1, Sch. 3. *See also* Ex. A-1 at 13; Ex. A-20, Sch. RB D-1; Ex. R-33 at 2.

26 ¹² Ex. A-5 at 4.

¹³ *Id.*

¹⁴ *Id.* at 7. Purchased power accounts for nearly 18% of the Company's operating expenses.

1 Northern, Eastern and Western Groups' systems and even with the implementation of
2 ACRM surcharges for those systems requiring arsenic treatment.¹⁵ Moreover, the
3 Company has had to postpone capital investment in other needed infrastructure, including
4 replacement mains, new storage tanks, upgrades to booster pump stations, and upgrades to
5 water production capacity.¹⁶ The Company estimates that it will need to spend
6 approximately \$19 million each year for the next several years simply to catch up with
7 needed utility plant additions that were deferred due to the need to construct arsenic
8 treatment plants.¹⁷ Clearly, rate increases are needed to support the additional
9 infrastructure and allow the Company to obtain the required capital on terms and
10 conditions favorable to the Company and its customers.

11 C. The Company's Test Year Operating Results and the Continued
12 Erosion of Its Earnings

13 During the 2007 test year, the Company earned a return of only 3.47% on an
14 adjusted rate base of nearly \$145 million.¹⁸ To put this anemic return in context, the yield
15 on a 20-year Treasury bond – the rate used as the “risk-free” rate of return by the
16 Company's and Staff's cost of capital witnesses – was 4.6% on June 15, 2009.¹⁹
17 Unfortunately, since the end of the test year, the Company's earnings have continued to
18 erode because of rising expenses and declining water sales.

19 In 2008, the Company experienced a 6.47% reduction in water sales from test year
20 levels, which represents about \$2.4 million in unrealized revenues.²⁰ This includes a
21

22 ¹⁵ Ex. A-5 at 4-7. As explained by Mr. Garfield, a substantial portion of the Company's
23 construction budget was diverted during the 2004-2006 time period for the construction of arsenic
treatment plant and related facilities. See Ex. A-1 at 11-13.

24 ¹⁶ Ex. A-1 at 11-12.

25 ¹⁷ Ex. A-1 at 12; Tr. at 203-05.

26 ¹⁸ Company Final Sch. A-1 (Total Company).

¹⁹ Ex. A-42 at Tab 1, Rebuttal Table 14.

²⁰ Ex. A-20 at 8, 33.

1 decline of nearly 50% in construction water sales, and declines of 18% and 9%,
2 respectively, in water sales to the Company's two largest customers, Abbott Laboratories
3 and Frito-Lay, both of which intend to further reduce the amount of water they purchase
4 from Arizona Water.²¹ In fact, those customers' water use continued to decline during the
5 first six months of 2009.²² At the same time, operating expenses increased by \$2.0
6 million in 2008 as compared to 2007 adjusted levels.²³

7 Based on these conditions and assuming that the Company's proposed rates had
8 been in effect, the Company would have earned returns of 8.3% on year-end invested
9 capital and 9.5% on year-end common equity in 2008.²⁴ In contrast, under Staff's
10 proposed rates, the Company would have earned returns of only 6.7% on year-end
11 invested capital and 6.4% on year-end common equity in 2008. Under RUCO's proposed
12 rates, the Company would have earned even lower returns of 6.3% on year-end invested
13 capital and 5.5% on year-end common equity in 2008. Furthermore, under the rates
14 proposed by Staff and RUCO, the Company's pre-tax interest coverage would be barely
15 above 2.0x – well below the ratios of the publicly traded water utilities used to estimate
16 the Company's cost of equity.²⁵ Without the rate increases sought by the Company, the
17 Company may be unable to generate earnings sufficient to satisfy the interest coverage
18 test in its mortgage bond indenture, and therefore would be unable to issue additional
19 long-term debt.²⁶

20 For these reasons, the Company urges the Commission to promptly authorize the

21 ²¹ *Id.* at 8-9; Ex. A-3 at 5, Ex. WMG-RB5, Ex. WMG-RB6; Abbott-1 at 4-6.

22 ²² Ex. A-21 at 8-9.

23 ²³ Ex. A-20 at 33.

24 ²⁴ Ex. A-22, Sch. JMR-RJ1.

25 ²⁵ *Id.* at 6; Ex. A-48 (Value Line reports). Value Line reports that American States Water Co.,
26 Aqua America, Inc., and California Water Service Group have interest coverage ratios of 3.4x,
3.4x and 4.4x, respectively.

²⁶ Ex. A-22 at 6. *See also* Ex. A-20 at 4-7 (discussing the negative financial impact of Staff's and
RUCO's recommendations).

1 rate increases it has requested. The Company's proposed rates are just and reasonable in
2 light of its significant investment in utility plant, increases in operating expenses and
3 declines in water sales, will allow the Company to earn a reasonable return on its
4 investment in light of current market conditions, and ensure that rates are based on the
5 cost of providing service – a fundamental tenet of ratemaking.²⁷

6 The Company also requests that the Commission authorize rate adjustment
7 mechanisms for purchased power, water and fuel costs, modeled after the purchased
8 power adjustment mechanism already authorized for the Northern Group systems, or in
9 the alternative, a rate adjustment mechanism that tracks changes in the Consumer Price
10 Index, which will ensure that the Company's rates reflect the cost of providing service and
11 allow the Company an opportunity to actually earn its authorized rate of return.

12 **II. RATE BASE**

13 As discussed above, the Company has made very significant investment in utility
14 plant facilities over the past few years. The combined rate bases of the Company's three
15 groups increased by more than \$16 million, \$27 million and \$28 million, respectively,
16 since those groups' last rate cases.²⁸ From 2005 through the end of the test year alone, the
17 Company's invested capital increased by \$43 million. These are substantial sums, arising
18 largely from the cost of mandated arsenic treatment facilities, but not exclusively, as new
19 wells, water lines and other critical facilities have also contributed to the significant
20 increases in rate base recommended by the Company, Staff and RUCO. The Company's,
21 Staff's and RUCO's proposed rate bases by system, are, respectively, as follows²⁹:

23 ²⁷ See, e.g., Ex. R-35 at 4 ("RUCO continues to advocate that separate rates for separate systems
24 respect the principle of traditional cost of service ratemaking and ensure that those who use the
utility services pay for them.").

25 ²⁸ Ex. A-1 at 5; Ex. A-5 at 3.

26 ²⁹ These rate base amounts are taken directly from the parties' respective "Final Schedules" filed
October 2, 2009.

1	<u>System</u>	<u>Company</u>	<u>Staff</u>	<u>RUCO</u>
2	Superstition	\$42,819,595	\$42,812,403	\$42,469,175
3	Bisbee	4,613,423	4,619,362	4,619,181
4	Sierra Vista	2,497,965	2,491,943	2,499,869
5	San Manuel	2,037,828	2,019,483	2,040,063
6	Oracle	2,390,916	2,392,281	2,392,376
7	Winkelman	326,090	336,179	326,452
8	Miami	7,619,322	7,551,225	7,423,470
9	Casa Grande	40,039,495	40,554,691	40,028,827
10	Stanfield	807,214	791,031	780,705
11	White Tank	4,370,834	4,372,718	4,370,865
12	Ajo	1,036,582	1,113,530	1,097,438
13	Coolidge	4,231,163	4,256,413	3,430,027
14	Lakeside	7,125,998	7,019,069	7,026,223
15	Overgaard	3,314,202	3,315,094	3,316,375
16	Sedona	17,500,962	17,509,568	13,753,107
17	Pinewood	1,868,592	1,827,362	1,831,172
18	Rimrock	<u>2,319,273</u>	<u>2,316,986</u>	<u>2,320,669</u>
19	Total	\$144,979,452	\$145,298,638	\$139,725,992

20 The difference in proposed rate base between Staff and the Company arises from a
21 difference of opinion over working capital, and disputes over plant in use, post test year
22 plant, plant held for future use and treatment of plant scheduled for retirement. The
23 difference in the amounts of rate base proposed by the Company and RUCO is based on
24 disputes over plant in use, post test year plant, and plant held for future use. Each of the
25 rate base issues that remain in dispute in this rate case is addressed below in this section of
26 the Company's brief.

1 A. Working Capital: The Inclusion of Quarterly Dividend Payments in the
2 Lead/Lag Study is Balanced and Reasonable

3 Working capital represents the shareholder's "necessary investment in materials
4 and supplies, and the cash required to meet current obligations and maintain minimum
5 bank balances."³⁰ A working capital allowance is included in rate base in order to
6 compensate the investor for supplied capital for the day-to-day operation of the business.
7 The amount of this allowance is largely dependent on the entity's purchasing and billing
8 practices, typically ascertained through preparation of a lead/lag study.³¹

9 The Company prepared a lead/lag study to support its recommended working
10 capital allowance. In addition to the Company's operating expenses, Mr. Reiker included
11 the debt and equity cost components of operating income in the lead/lag study. As Mr.
12 Reiker explained, the Company is "indifferent" to the inclusion of operating income in the
13 lead/lag, however, if one component of operating income – the cost of debt – is to be
14 included, then the cost of equity should also be considered.³² Mr. Reiker chose to include
15 the cost of equity in his lead/lag study given Staff and RUCO's established practice of
16 including only the cost of debt, rather than exclude both.³³

17 Staff and RUCO initially opposed any consideration of the cost of equity in the
18 determination of working capital. Staff argued that it is "not normal or appropriate" to
19 include the cost of equity in a lead/lag study.³⁴ According to Staff, unlike the cost of debt,
20 the cost of equity was not properly included because it is not known and measurable.³⁵
21 RUCO likewise asserted that the cost of common equity should not be included in a

22 ³⁰ Charles F. Philips, Jr., *The Regulation of Public Utilities*, 348 (Public Utilities Reports, Inc.
23 1993).

24 ³¹ *Id.*

25 ³² Ex. A-20 at 17-18; Tr. at 625-26.

26 ³³ *Id.*

³⁴ Ex. S-15 at 15.

³⁵ Ex. S-16 at 18.

1 lead/lag study because such costs are not subject to measure like debt.³⁶ Despite this,
2 RUCO later recommended an alternative lead/lag approach during the hearings when the
3 evidence elicited by Chairman Mayes and Judge Nodes made it clear that the Company's
4 practice of making quarterly dividend payments to its shareholder is known and
5 measurable.³⁷

6 Specifically, RUCO's witness testified that the Company's practice of making
7 quarterly dividend payments to shareholders is an "actual cash outlay" for which an
8 expense lag can be calculated.³⁸ Although the Company and RUCO may not be in
9 complete agreement regarding including operating income in a lead/lag study, the
10 Company accepted RUCO's alternative lead/lag approach and included the quarterly
11 dividend payments in its final determination of working capital.³⁹ RUCO did as well.⁴⁰
12 Staff, however, continued to disagree that dividend payments or any measure of the cost
13 of equity should be considered in the working capital calculation.⁴¹ Staff's position
14 should be rejected.

15 **B. Utility Plant in Service - Issues in Dispute**

16 **1. Brief Overview**

17 At the start of the hearings, there were several plant issues in dispute between the
18 Company, Staff and RUCO. As reflected in the Company's Exhibit A-13, there were
19 generally four areas of disagreement:

- 20 • Plant in Use

21
22 ³⁶ Ex. R-18 at 24.

23 ³⁷ See Tr at 920-22. See also Tr. at 472-73, 812-815.

24 ³⁸ *Id.* at 920.

25 ³⁹ Company Final Schedules, Sch. B-5.

26 ⁴⁰ See, e.g., RUCO Final Schedules, Sch. TJC-6.

⁴¹ See Staff Final Schedules. Notably, Staff's schedules do not identify either Staff's working capital calculation or any adjustments. However, in the absence of an indication otherwise, the Company assumes Staff has not changed its position.

- 1 • Plant to be Retired
- 2 • Post Test Year Plant
- 3 • Plant Held for Future Use

4 There remain, as addressed below, items in dispute with respect to each of these
5 categories. However, during the hearings, a number of disputed plant issues were
6 resolved. These include:

- 7 • Staff's agreement that the Sedona Golf Resort Well (ADWR
8 Well No. 55-518969); the Casa Grande Cottonwood Well No.
9 14 (ADWR Well No. 55-616598); and Miami Bandy Hts.
10 Boosters are currently in use and serving customers.
- 11 • RUCO's agreement that plant can be retired in this rate case
12 by removing an equal amount from plant in service and
13 accumulated depreciation.

14 The disputes that remain are addressed in more detail below, and as reflected in the
15 Company's Brief Exhibit A, attached hereto.

16 2. Plant in Use

17 The parties disagree on whether several plant items are currently in use and serving
18 customers. These plant items include wells, boosters, safety and storage fencing and other
19 miscellaneous items. As mentioned above, Staff and the Company resolved their
20 differences over wells, one in the Sedona system and one in the Casa Grande system, and
21 a booster station in the Miami system. RUCO did not agree, but the only evidence offered
22 by RUCO in support of its position that two wells in the Sedona and Casa Grande systems
23 and the boosters in the Miami system are not in use is a reference to the Company's
24 response to a Staff data request.⁴²

25 ⁴² See e.g., Ex. R-27, Sch. WAR-3, page 1 (Sedona); RUCO Final Schedules, Sch. WAR-3, page
26 1 (Sedona); Ex. R-18, Sch. TJC-3, page 1 (Miami); RUCO Final Schedules, Sch. TJC-3, page 1
 (Miami); Ex. R-18, Sch. TJC-3, page 1 (Casa Grande); RUCO Final Schedules, Sch. TJC-3, page
 1 (Casa Grande).

1 But Staff's engineering witness looked past the referenced response to the data
2 request, and, relying on her inspection and clear evidence in the record, she testified that
3 the plant items Staff originally found not in use by Staff are in fact in use and serving
4 customers.⁴³ It follows that RUCO's rate analyst's reliance on Staff's position based on a
5 data request response, which is no longer Staff's position, is not a basis for disallowing
6 nearly \$2 million of used or useful plant.

7 The dispute remaining between Staff and the Company involves only a few plant
8 items, mostly fence and storage buildings and the like.⁴⁴ Staff asserts that if fences and
9 storage are for facilities that are not in service today, then the fences and storage, while
10 beneficial, are not used or useful.⁴⁵ But the lines between accounting and ratemaking on
11 the one hand, and operational reality on the other cannot be so narrowly drawn. The
12 Company's facilities and equipment, whether currently in service or not, have to be
13 properly stored and protected.⁴⁶ The Company's plant sites and facilities cannot be left
14 unsecured. For obvious reasons that include the public health and safety and protection of
15 Arizona's precious groundwater supplies, the Company must prevent unauthorized access
16 by storing its plant, materials and supplies in secure locations. This is consistent with Mr.
17 Olea's view of plant that is currently in use as including plant that is needed to return a
18 water system, in whole or in part, to the point at which it provides reliable water utility
19 service.⁴⁷ This view and the evidence show the fallacy of Staff's more restrictive view
20 that every plant item must actually be in use every day. All plant that is currently in
21 service, including, for example, fences and storage buildings used to provide security for
22 plant and materials, should be included in rate base.

23 ⁴³ Tr. at 1181-1190, 1193, 1223-27.

24 ⁴⁴ See Brief Exhibit A, attached hereto.

25 ⁴⁵ Ex. S-16 at 12.

26 ⁴⁶ Ex. A-22 at 9-10; Tr. at 377-78

⁴⁷ Tr. at 1065-68.

1 **3. Plant to Be Retired**

2 During the inspection and discovery phase of this rate case, Staff found certain
3 plant items it believed to be "out of service". As discussed in the previous section, some
4 of these items, like the boosters in the Miami system, were actually in use, and Staff has
5 since agreed that they should be afforded rate base treatment. The Company further
6 determined that several other plant items discovered by Staff to be out of service actually
7 needed to be retired.⁴⁸ As a consequence, the Company has taken the necessary steps to
8 retire these plant items so that such retirements can be reflected in this case.⁴⁹

9 The longstanding accepted accounting and ratemaking treatment to retire plant is to
10 remove the plant's original cost from both utility plant in service and accumulated
11 depreciation.⁵⁰ This is what the Company has done in this case for the plant that it
12 determined needs to be retired following the Staff plant inspections.⁵¹ RUCO agrees to
13 the plant retirements and associated adjustments, including removal of the plant's original
14 cost from plant and from accumulated depreciation.⁵² This accounting and ratemaking
15 treatment for retired plant proposed by the Company and RUCO is in accordance with the
16 Uniform System of Accounts and is rate base neutral.⁵³

17 Staff does not agree with the Company and RUCO. Instead of retiring this plant
18 that needs to be retired, Staff proposes to take the plant out of rate base, along with the
19 amount of depreciation accumulated through the end of the test year.⁵⁴ This will do little
20 more than postpone the proper ratemaking treatment until another rate case, simply
21

22 ⁴⁸ Ex. A-20 at 12-13; Ex. A-22 at 7-9; Tr. at 516, 518-19.

23 ⁴⁹ Tr. at 512.

24 ⁵⁰ Tr. at 1596; Ex. A-20 at 13.

25 ⁵¹ Ex. A-20 at 13.

26 ⁵² Tr. at 911-12; RUCO Final Schedules, Sch. WAR-3 (Total Company).

⁵³ Tr. at 1596

⁵⁴ Ex. S-16 at 4.

1 because the Company initially included these plant items in rate base.⁵⁵ This is not a
2 sensible approach. The parties are here now, the rate base should be determined based on
3 all available information, and the typical ratemaking treatment for plant retirements
4 should be utilized. Staff agrees that the goal is to get it right in this case.⁵⁶ And Staff
5 further admits that there is nothing precluding the Commission from treating the plant as
6 retired for purposes of determining the Company's rate base in this rate case.⁵⁷ This is a
7 bookkeeping entry and there is simply no good reason in this case to reject the typical,
8 rate base neutral ratemaking treatment for plant all parties agree is permanently out of
9 service.

10 4. Post Test Year Plant

11 The Company proposed that several plant items, paid for during the test year but
12 completed and placed in service at different times after the test year, be included in rate
13 base.⁵⁸ Staff and RUCO support inclusion of post test year plant in rate base in some
14 instances, but not in others. Specifically,

- 15 • Arsenic Treatment Plant – Staff and RUCO support inclusion of all post-
16 test year arsenic treatment plant in rate base.
- 17 • Phoenix Office Plant – Staff and RUCO support inclusion of this plant in
18 rate base.
- 19 • Highway 179 Project – Staff supports inclusion of this plant in rate base;
20 RUCO recommends inclusion of 65% of the plant cost in rate base.
- 21 • Valley Vista Well – Staff supports inclusion of the cost of this well in
22 rate base; RUCO does not.
- 23 • Pinewood Electrical Box – Staff and RUCO oppose inclusion of this
24 plant in rate base.

25 ⁵⁵ Tr. at 1595-97.

26 ⁵⁶ Tr. at 1594.

⁵⁷ Tr. at 1594-95. In fact, Staff has recommended an adjustment similar to that proposed by the Company and RUCO in another rate case where the utility included plant that should have been retired in rate base. Tr. at 1600; Ex. A-55.

⁵⁸ E.g., Ex. A-13. See also Brief Ex. A, attached hereto.

1 Obviously, Staff and RUCO cannot argue that there is an absolute prohibition against
2 including post test year plant in rate base. In fact, this Commission has frequently
3 included post test year plant in rate base when such plant is revenue neutral (i.e.,
4 constructed to serve existing customers) and placed in service within a reasonable time
5 after the test year to allow for audit and inspection.⁵⁹

6 **a. Sedona System – Well No. 13 (Valley Vista well)**

7 The Valley Vista well was constructed in the Sedona system because the Company
8 needed the additional capacity to maintain reliable water service to current customers.⁶⁰
9 The Company spent roughly \$1.6 million for this well in 2006 and 2007, and construction
10 of this well in the Sedona system was complete in April 2007, well within the test year.⁶¹
11 The well was placed in service in May 2008, less than six months after the end of the test
12 year.⁶² The delay in bringing the well into service was due to the time it took to obtain an
13 approval of construction from ADEQ.

14 RUCO opposes including this well in rate base because doing so violates the
15 “matching principle” and because it was placed in service beyond six months after the test
16 year.⁶³ However, the plant does meet RUCO’s arbitrary six-month standard; although the
17 Company initially mistakenly reported that the Valley Vista well was placed in service in
18 November 2008. In any event, it was clearly placed in service in May 2008.⁶⁴
19 Furthermore, RUCO’s post test year plant criteria are contradicted by the wealth of past
20

21 ⁵⁹ See *Chaparral City Water Company*, Decision 68176 (September 30, 2005); *Rio Rico Utilities*,
22 *Inc.*, Decision No. 67279 (October 5, 2004); *Bella Vista Water Company*, Decision No. 65350
23 (November 1, 2002); *Arizona Water Company*, Decision No. 65350 (November 1, 2002);
Paradise Valley Water Company, Decision No. 61831 (July 20, 1999); *Far West Water*
Company, Decision No. 60437 (September 29, 1997).

24 ⁶⁰ Tr. at 390-393.

25 ⁶¹ Tr. at 331.

26 ⁶² Ex. A-14; Tr. at 330-31.

⁶³ Ex. R-18 at 17-18; Ex. R-19 at 11-13.

⁶⁴ Ex. A-14; Tr. at 330-31.

1 Commission decisions. Indeed, the cases cited by the Company that support of the
2 inclusion of post test year plant in rate base generally allow plant in service up to one-year
3 after the test year to be included in rate base.⁶⁵ Again, the key is ensuring that Staff and
4 RUCO have an adequate opportunity to inspect the plant and verify its cost.

5 No legitimate claim of inadequate time to inspect this plant item was made in this
6 case by RUCO, and the evidence in this record shows clearly that the Valley Vista well
7 has been in service since May 23, 2008. The well is revenue neutral, and it should be
8 included in rate base.

9 **b. Highway 179 Project**

10 The total cost of the Highway 179 project should also be included in rate base.
11 According to the Arizona Department of Transportation ("ADOT"), "traffic build up" on
12 Highway 179 was continuing to "exacerbate capacity and safety issues".⁶⁶ To address
13 this, ADOT undertook, beginning as early as August 2003, to build a "transportation
14 corridor that addresses safety, mobility and preservation of scenic, aesthetics, historical,
15 environmental and other community values."⁶⁷ ADOT's Highway 179 project
16 "dramatically impacted" the Company's facilities, and the Company was "required" to
17 participate in the project to address the impact of the State's road construction on its
18 plant.⁶⁸ The Company entered into an agreement with ADOT in May 2006, and made
19 payment of nearly \$1.9 million to ADOT in June 2007, in the middle of the test year.
20 Even so, it then took ADOT more than two years to complete the project.⁶⁹

21 RUCO recommends that only 65% of the cost of this project be included in rate
22

23

⁶⁵ See Decisions cited in footnote 59, above.

24 ⁶⁶ Ex. A-17.

25 ⁶⁷ *Id.*

26 ⁶⁸ Tr. at 419-20.

⁶⁹ Tr. at 338.

1 base in this case.⁷⁰ RUCO disallowed the remaining \$665,000 of plant cost incurred and
2 paid during the test year because the Company indicated in a data request response that
3 ADOT's construction of the project was 65% complete as of November 2008. The
4 Company submits RUCO's position is patently unfair.

5 The Company was obligated by ADOT to undertake a project that required the
6 Company to spend \$1.9 million dollars on used or useful plant nearly three years before
7 the rates in this case will be in effect. The Company had no control over the cost or
8 timing of the project, which was deemed necessary for public safety (among other things)
9 by the State of Arizona.⁷¹ Put simply, for no valid reason, RUCO wants to postpone
10 recognizing nearly \$700,000 of used or useful investment made during the test year.

11 **c. Pinewood Electrical Panel**

12 The dispute over the Pinewood electrical box is similar to the ADOT project, in
13 that the Company prudently invested funds during the test year, and, through no fault of
14 the Company, a third party beyond the Company's control delayed implementation.
15 Specifically, the Company spent roughly \$40,000 to replace an old electrical panel in its
16 Pinewood system during the test year.⁷² All the work was completed and the panel was
17 ready to be placed in service during the test year.⁷³ Then, the electric provider claimed
18 that the Company was responsible for repairs to the line on the electric service provider's
19 side of the meter, which led to a dispute with the electric service provider.⁷⁴ Eventually,
20 the electric service provider repaired the line and the new power panel was placed in
21 service. Again, given the compelling facts, there is no good reason to exclude from rate
22 base this plant item that was ready for service in the test year.

23

⁷⁰ Ex. R-19 at 14-16.

24 ⁷¹ Ex. A-14.

25 ⁷² E.g., Ex. A-13.

26 ⁷³ Tr. at 339, 448.

⁷⁴ Tr. at 340.

1 **5. Plant Held for Future Use**

2 The last category of plant in dispute is plant held for future use. Generally, plant
3 held for future use is plant that can be readily put into service, and is distinguished from
4 construction work in progress by the fact that it does not require acquisition and
5 construction before it can be put to use.⁷⁵ The Company identified a number of plant
6 items as plant held for future use. These items included a number of wells in several
7 systems (Casa Grande, Coolidge, Coolidge, White Tank) as shown in Brief Exhibit A.
8 These items were previously in use and in rate base.⁷⁶ These items were taken out of
9 service for repairs, maintenance and in some cases, refurbishment. These items can either
10 be readily returned to service with minor undertaking, or are subject to a definite plan to
11 return them to service.⁷⁷ As such, the Commission can and should include these facilities
12 in rate base as plant held for future use.

13 **a. There Are Many Jurisdictions that Include Plant Held for**
14 **Future Use in Rate Base**

15 The crux of the issue with plant held for future use is whether it should be afforded
16 rate base treatment. There is no prohibition of such treatment under Arizona law and,
17 while other jurisdictions are split on the treatment of plant held for future use, the majority
18 of jurisdictions appear to favor including plant held for future use in rate base.⁷⁸ Fifteen

19 ⁷⁵ Ex. A-15; Ex. A-16.

20 ⁷⁶ Ex. A-13; Ex. A-10 at 21-28.

21 ⁷⁷ *Id.*

22 ⁷⁸ During the hearing, Judge Nodes directed the Company to determine the treatment of plant held
23 for future use by public utility commissions in the other states. Tr. at 415-16. The Company has
24 analyzed the treatment of plant held for future use in 20 other jurisdictions and presents the
25 results of that analysis herein. These twenty jurisdictions include Arkansas, Colorado,
26 Connecticut, Idaho, Indiana, Illinois, Kansas, Maine, Maryland, Massachusetts, Minnesota,
Mississippi, New Hampshire, New Mexico, Pennsylvania, Rhode Island, South Carolina, Texas,
Vermont and Washington. The Company did not review the law in the remaining states believing
that this sample is representative of the treatment of plant held for future use in other
jurisdictions. The Company has not left out any information on favorable or unfavorable
treatment in other jurisdictions that came into its possession as part of this analysis. Copies of all
cited authorities are being provided to Judge Nodes and the other parties along with their copies
of this brief.

1 of the 20 jurisdictions examined include plant held for future use in rate base if the utility
2 satisfies the jurisdiction's applicable test.⁷⁹

3 For example, Illinois,⁸⁰ Maine,⁸¹ Mississippi,⁸² New Mexico⁸³ and Texas⁸⁴ all apply
4 variations of the definite plan test, which provides that a utility is entitled to earn a return
5 on its investment in plant or property held for future use if the utility affirmatively
6 demonstrates the existence of a definite plan for future use of the plant or property.
7 Arkansas,⁸⁵ Colorado,⁸⁶ South Carolina⁸⁷ and Rhode Island⁸⁸ apply future use tests under

8
9 ⁷⁹ These 15 jurisdictions include Arkansas, Colorado, Connecticut, Idaho, Illinois, Maine,
10 Maryland, Minnesota, Mississippi, New Hampshire, New Mexico, Rhode Island, South Carolina,
11 Texas and Vermont.

12 ⁸⁰ See *City of Chicago v. Illinois Commerce Comm'n*, 478 N.E.2d 1369, 1373-74 (Ill. App. Ct.
13 1985) ("A utility is entitled to earn a return on its investment in property held for future use if the
14 property was acquired in good faith with a definite plan for its use and it is reasonably acquired
15 and retained to serve the utility's customers.").

16 ⁸¹ See *Central Maine Power Co. v. Pub. Util. Comm'n*, 433 A.2d 331, 340-41 (Me. 1981)
17 (holding that no land will be deemed eligible for inclusion in rate base as property unless the
18 Company affirmatively demonstrates the existence of a definite plan for future use); see also
19 *American Assoc. of Retired Persons v. Pub. Util. Comm'n*, 678 A.2d 1025, 1029 (Me. 1996).

20 ⁸² See *State of Mississippi v. Mississippi Pub. Serv. Comm'n*, 435 So.2d 608, 620 (Miss. 1983)
21 ("If the property will be employed within a reasonable time, and if the utility's management can
22 show a definite plan as to how the property will be employed for public service, then the
23 property's value may be included in the rate base."); see also *S. Hinds Water Co. v. Mississippi
24 Pub. Serv. Comm'n*, 422 So. 2d 275, 283 (Miss. 1982).

25 ⁸³ See *Re Sw. Pub. Serv. Co.*, 27 P.U.R. 4th 302, 305-07 (N.M.P.S.C. 1978) (holding that a utility
26 can include plant held for future use in rate base if use of plant is imminent under a definite
plan); *Re El Paso Elec. Co.*, 23 P.U.R. 4th 131, 137 (N.M.P.S.C. 1977).

⁸⁴ See *Cities for Fair Util. Rates v. Pub. Util. Comm'n*, 924 S.W.2d 933, 937 (Tx. 1996) (holding
that plant held for future use can be included in rate base where the utility demonstrates specific
plans for the use of the plant within a ten year period from test year end).

⁸⁵ See *In re Arkansas Louisiana Gas Co.*, 96 P.U.R. 3d 209, 219 (Ark. P.S.C. 1972) (stating that
the Commission has been among the great majority holding that land held for future use may be
included in the rate base where the land will in the future serve a utility purpose).

⁸⁶ See *Denver Union Stock Yard Co. v. United States*, 57 F.2d 735, 746-50 (D. Col. 1932) (stating
that land not yet in use but reasonably acquired for future use may be allowed as part of rate
base).

⁸⁷ See *S. Bell Tel. & Tel. Co. v. Pub. Serv. Comm'n*, 244 S.E.2d 278, 283-84 (S.C. 1978) (holding
that property purchased to serve future utility purpose should be included in the utility's rate
base).

⁸⁸ See *In re new England Tel. & Tel. Co.*, 99 P.U.R. 3d 228, 232 (R.I.P.U.C. 1973) (including
property held for future use in rate base if it is necessary to meet foreseeable service requirements
of the public).

1 which they include plant or property held for future use in rate base if the plant or
2 property will serve a future utility purpose. Connecticut,⁸⁹ Minnesota⁹⁰ and Vermont⁹¹
3 apply timing tests under which they include plant or property held for future use in rate
4 base if service from the plant or property is near enough to commencing that it has a
5 quality analogous to that of working capital. Idaho's test provides that when plant or
6 property held for future use is known and measurable it must be reflected in the rate
7 base.⁹² Finally, Maryland's test permits the inclusion of plant or property held for future
8 use in rate base if the acquisition was reasonably necessary and its use is anticipated with
9 reasonable precision, or if the property is likely to be placed in service within the period
10 for which the rates are fixed.⁹³

11 In contrast, five of the 20 jurisdictions exclude plant or property held for future use
12 for a variety of reasons.⁹⁴ Pennsylvania⁹⁵ and Washington⁹⁶ both have statutes barring the
13 inclusion of plant or property in rate base if it is not actually and presently providing
14 utility service to customers. Indiana,⁹⁷ Kansas⁹⁸ and Massachusetts⁹⁹ exclude plant or

15 ⁸⁹ See *S. New England Tel. Co. v. Pub. Util. Comm'n*, 282 A.2d 915, 920-21 (Conn. Super. Ct.
16 1970) (stating that the proper test is whether the timing of using the property in question is so
17 near that it may be properly be held to have the quality of working capital).

18 ⁹⁰ See *Nw. Bell Tel. Co. v. State*, 216 N.W.2d 841, 850-51 (Minn. 1974) (holding that property
19 held for future use can be included in rate base when its term of service is so near commencing
20 that it has a quality analogous to that of working capital).

21 ⁹¹ See *In re New England Tel. & Tel. Co.*, 382 A.2d 826, 832 (Vt. 1977) (stating that the essential
22 component is whether the time for using the property in question is so near that it may properly
23 be held to have the quality of working capacity); see also *In re Vill. of Stowe Elec. Dep't*, 367
24 A.2d 1056, 1060 (Vt. 1976)

25 ⁹² *Utah Power & Light Co. v. Idaho Pub. Util. Comm'n*, 673 P.2d 422, 425-26 (Idaho 1983).

26 ⁹³ *Baltimore Gas & Elec. Co. v. McQuaid*, 152 A.2d 825, 828-29 (Md. Ct. App. (1938).

⁹⁴ These five jurisdictions include Indiana, Kansas, Massachusetts, Pennsylvania and Washington.

⁹⁵ See *Barasch v. Pennsylvania Pub. Util. Comm'n*, 532 A.2d 325, 332 (Penn. 1987) (holding that
66 Pa. Cons. Stat. § 1315 prevents plant or property from being included in rate base if it is not
presently providing actual utility service to the customers).

⁹⁶ See *People's Org. for Washington Energy Res. V. State of Washington Util. & Transp.
Comm'n*, 679 P.2d 922, 925 (Wa. 1984) (explaining that RCW 80.04.250 prevents property held
for future use from being included in rate base).

⁹⁷ See *Citizens Action Coal. of Indiana v. N. Indiana Pub. Serv. Co.*, 472 N.E. 2d 938, 947-58
(Ind. Ct. App. 1984) (noting that an asset cannot be considered in the rate base until it has been

1 property held for future use based on the argument that an asset cannot be included in rate
2 base if it is not currently in service to the ratepayers.

3 **b. Arguments for Rate Base Treatment**

4 As stated, it appears that the majority of jurisdictions favor the inclusion of plant
5 held for future use in rate base and an examination of these jurisdictions' applicable tests
6 supports the inclusion in rate base of the plant items the Company identified as plant held
7 for future use in this rate case. The Company outlined its definite plans for when these
8 plant items would be placed into service.¹⁰⁰ The Company also clearly articulated the
9 future purposes these items will serve for the benefit of its customers and demonstrated
10 that the items are necessary for the continued service of its customers needs.¹⁰¹ Indeed, in
11 Mr. Olea's view, much of what the Company called plant held for future use can actually
12 be designated as plant currently in use.¹⁰² Additionally, the majority of the projects
13 involving the plant items will soon commence, with planned completion by 2010, 2011 or
14 2012, the exact period in which the rates approved in this proceeding are expected to be in
15 effect.¹⁰³ Finally, Arizona does not have any statutes comparable to those of Pennsylvania
16 and Washington, or any other precedent that bars the inclusion of plant or property held
17 for future in rate base.

18 **6. RUCO's Adjustment for CWIP Is Confiscatory**

19 To minimize the issues in dispute, the Company accepted Staff's recommended
20

21 placed in service, including property held for future use).

22 ⁹⁸ See *Re Sw. Bell Tel. Co.*, 28 P.U.R. 4th 519, 528 (Kan. S.C.C. 1979).

23 ⁹⁹ See *Boston Edison Co. v. Dep't of Pub. Util.*, 375 N.E.2d 305, 319-20 (Mass. 1977) (excluding
24 from rate base items that are not currently used and useful to the ratepayers, which includes
property held for future use).

25 ¹⁰⁰ Ex. A-10 at 21-28.

26 ¹⁰¹ *Id.*

¹⁰² Tr. at 1065-68.

¹⁰³ *Id.*

1 adjustments to remove several items paid for with contributions in aid of construction
2 ("CIAC") from plant in service, along with the corresponding CIAC entries.¹⁰⁴ Staff
3 found that these plant items were not in use and that the cost should be removed from
4 plant in service and the corresponding CIAC.¹⁰⁵ RUCO agrees that the plant should be
5 removed from plant in service but refuses to remove the corresponding CIAC.¹⁰⁶

6 Under RUCO's strained logic, if the Company had one piece of plant funded by
7 CIAC, and the plant was removed from rate base, the Company would have a negative
8 rate base.¹⁰⁷ Obviously, that would be absurd. The bottom line is that RUCO's
9 unbalanced adjustment is intended to deny the Company more than \$1.2 million of
10 otherwise unchallenged rate base.¹⁰⁸ If CWIP is removed from plant in service, the
11 corresponding CIAC must also be removed in order to avoid artificially decreasing rate
12 base. This is what Staff proposes and the Company has accepted in this rate case.

13 **III. REVENUE AND OPERATING INCOME**

14 **A. The Expense Normalizations Recommended by Staff and RUCO Are** 15 **Not Supported by Substantial Evidence and Should Be Rejected.**

16 RUCO recommends that the level of test year labor expense be reduced because of
17 what it calls "normalization."¹⁰⁹ According to RUCO, normalization is appropriate
18 because test year overtime hours were higher than the two years before the test year and
19 the one after. Staff recommends normalizing tank maintenance expense, and transmission
20 and distribution expenses in accounts 663 and 672, and the maintenance expense for the
21 Desert Mountain Pumping station.¹¹⁰ According to Staff, doing so is "necessary when a

22 ¹⁰⁴ See Brief Exhibit A; Ex. S-15 at 12-13.

23 ¹⁰⁵ Ex. S-15 at 12.

24 ¹⁰⁶ Tr. at 914-15.

24 ¹⁰⁷ Tr. at 620.

25 ¹⁰⁸ Tr. at 618-21.

25 ¹⁰⁹ Ex. R-27 at 11-12.

26 ¹¹⁰ Ex. S-24 at 15-19; Ex. S-25 at 9-17.

1 utility experiences a non-recurring material spike in the test year cost.”¹¹¹

2 Normalization, as advocated by Staff and RUCO, is not proper ratemaking.
3 Normalization is not based on known and measurable changes to the test year.¹¹² Neither
4 Staff nor RUCO could adequately explain why these expenses were singled out from the
5 many operating expenses the Company incurs, or why none of the Company’s many other
6 expenses were not evaluated for “normalization”.¹¹³ Finally, normalization using years
7 prior to the test year exacerbates the adverse effect of regulatory lag.¹¹⁴ For example, in
8 this case, Staff and RUCO both used the two years prior to the test year – 2005 and 2006 –
9 to make their normalization adjustments for test year 2007. This ensures that the
10 Company’s rates, to be newly in effect in early 2010, will be based on expenses incurred
11 up to five years earlier. In this way, test year cost of service is understated and the
12 attrition of the Company’s revenues and earnings is accelerated.

13 Even so, the Commission has applied normalization in a case where the evidence
14 clearly justified an adjustment. It has also denied it when the party proposing to
15 normalize a particular expense fails to meet its burden of proving that the recommended
16 adjustment is necessary and supported by substantial evidence.¹¹⁵ This should be the case
17 here as well because neither Staff nor RUCO have shown that their recommended
18 “normalization” adjustments are necessary or supported by substantial evidence. Each of
19 the proposed normalization adjustments is discussed below.

22 ¹¹¹ Ex. S-25 at 13.

23 ¹¹² Ex. A-20 at 32.

24 ¹¹³ Tr. at 1036-37; 1659.

25 ¹¹⁴ Ex. A-20 at 32.

26 ¹¹⁵ See Recommended Opinion and Order, Docket No. W-02113A-07-0551 (“CCWC ROO”) at 24-25. The Commission voted to approve the CCWC ROO on October 8, 2009, without amendments to the cited portions. However, a signed decision had not been issued at the time of this filing.

1 **1. RUCO's Normalization of Labor Expense Is Not Known and**
2 **Measurable, nor Is it Supported by Substantial Evidence**

3 RUCO normalized overtime as part of labor expense, and made other related
4 adjustments to payroll expense, because "the test year level was higher" than 2005, 2006
5 and 2008.¹¹⁶ Higher test year levels appear to be all it takes for RUCO to recommend
6 normalization to lower operating expenses.¹¹⁷ RUCO presents no evidence of any inquiry,
7 analysis or otherwise to support its assumption that the test year was not a normal
8 reflection of the Company's costs. Furthermore, RUCO's initial starting point was
9 overstated because Mr. Rigsby misallocated capitalized labor to labor expense, thereby
10 substantially overstating the level of overtime hours he found to be "higher."¹¹⁸ Mr.
11 Rigsby later admitted his level of hours was overstated, but he did not explain why any
12 normalization adjustment was still necessary, especially once the correct expense level
13 was determined.¹¹⁹

14 There can be no legitimate dispute that the test year is presumed to be normal and
15 that adjustments to the test year should be based upon known and measurable changes.¹²⁰
16 RUCO never tried to assert that its normalization of labor expense is based on a known
17 and measurable change, because the record shows RUCO's normalization is based on
18 nothing more than unfounded assumptions. Because there is no evidence to support the
19 labor, payroll and related expense adjustments proposed by RUCO, the adjustments
20 should be rejected.

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¹¹⁶ Ex. R-27 at 12.

24 ¹¹⁷ Tr. at 1036-37. *See also* Ex. A-20 at 41-42.

25 ¹¹⁸ Ex. A-20 at 41.

26 ¹¹⁹ Ex. R-28 at 4-5.

¹²⁰ *See* CCWC ROO at 23. *See also* fn. 115, above.

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1 recommendation will leave the Company seriously under recovering this expense in some
2 years, and seriously over recovering in others. This is true primarily because Staff
3 purports to normalize expenses incurred by all the Company's systems over 7- and 14-
4 year cycles by using an unrealistic three year average.

5 The purpose of the Company's Commission-approved tank maintenance program
6 is to prolong the life of the Company's more than 100 storage tanks.¹²⁵ Under that
7 program, tank exteriors are painted every 7 years, and tank interiors are recoated every 14
8 years.¹²⁶ After decades of following this routine, the Company's experience shows that
9 that these intervals are necessary to maintain metal protection, a suitable exterior
10 appearance and prevent surface erosion.¹²⁷ Clearly, the cost of tank maintenance to the
11 Company varies from year to year, depending on the location, size and number of tanks
12 that are subject to maintenance in a given year. As a consequence of the significant
13 variation in this expense from year-to-year¹²⁸, the Commission authorized an annual
14 reserve accrual used to normalize the expenses over a 15-year period.¹²⁹ This
15 predetermined amount is debited to maintenance expense account 672 – Storage Tanks,
16 and credited to reserve account 265 – Tank Maintenance. The actual costs related to
17 painting and maintaining tanks are debited to account 265. In other words, the annual
18 accrual is added to the existing reserve balance while the maintenance costs actually
19 incurred are deducted from the balance. This method of accrual accounting for tank
20 maintenance expense has operated efficiently and successfully for over 30 years.¹³⁰ The
21 Company proposes to continue this treatment in this rate case. RUCO saw no reason to
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23 ¹²⁵ Ex. A-9 at 24-26.

24 ¹²⁶ *Id.*

24 ¹²⁷ *Id.*

25 ¹²⁸ *E.g.*, Ex. S-25 at 10.

25 ¹²⁹ Ex. A-20 at 26.

26 ¹³⁰ Ex. A-20 at 26-27.

1 challenge that method.¹³¹

2 Although Staff remained silent on this issue in the Company's last Northern Group
3 rate case, Staff openly supported continuation of the program and accrual methodology in
4 the last Eastern and Western Group rate cases.¹³² RUCO also recognized that the
5 Commission has previously adopted the approach advocated by the Company.¹³³ This
6 makes Staff's rejection of the Commission approved methodology in favor of a more
7 simplistic 3-year average normalization even more troubling.

8 Under Staff's approach, the normalized level of tank maintenance expense for the
9 Rimrock system is zero, however, Staff recommends nothing more than \$92 of annual
10 tank maintenance expense for this system. The Rimrock system's Wickiup Mesa tank is
11 scheduled for painting at a cost of over \$41,000 in 2010.¹³⁴ Likewise, after coming up
12 with a normalized tank maintenance expense of \$0 for the Lakeside system, Staff
13 recommends annual tank maintenance expense of only \$3,300. Two of Lakeside's tanks
14 are scheduled for maintenance in 2010 at a cost more than \$145,000.¹³⁵

15 Instead of accepting this evidence showing that Staff's position was fundamentally
16 flawed (because you cannot use a 3-year average of expenses that recur at intervals of 7
17 and 14 years) Staff witness Igwe claimed that the Company did not submit a tank
18 maintenance plan, without which, he testified, Staff could not evaluate the Company's
19 request.¹³⁶ But the Company did submit to Staff a substantial document that set forth its
20 tank maintenance plan – the timing of maintenance and the expected cost of maintenance
21 for each of the Company's more than 100 water storage tanks.¹³⁷ Staff also erroneously

22 ¹³¹ Tr. at 1007.

23 ¹³² Ex. A-20 at 27-28.

24 ¹³³ Tr. at 1007.

25 ¹³⁴ Ex. A-20 at 30-31

26 ¹³⁵ *Id.*

¹³⁶ Tr. at 1631, 1635, 1647-48.

¹³⁷ Ex. A-57; Tr. at 1788-89.

1 challenges the Company's estimate and inflation calculation. But these arguments are red-
2 herrings. If the Company's estimates turn out to be too high, under the longstanding
3 reserve accounting methodology, the account would be adjusted downward in the next
4 rate case. In other words, while ensuring that the Company has sufficient expense
5 recovery to cover major tank maintenance expenses incurred over the 7- and 14-year
6 cycles, the accrual accounting for the Company's tank maintenance program also ensures
7 that there is no over recovery. All funds recorded under this account reserve are
8 earmarked for and applied to offset tank maintenance expenses.¹³⁸

9 In summary, the Company's tank maintenance program and the associated accrual
10 accounting works. Staff certainly provided no sufficient basis for rejecting the
11 Company's longstanding methodology. Indeed, Staff's recommended simple three-year
12 averaging method will mean the Company will not have sufficient funds to continue to
13 fully, properly and routinely maintain its water storage tanks. That of course would not be
14 in the public interest.

15 **4. Staff's Recommendation to Normalize the Desert Pump Station**
16 **Maintenance Expense Is Unnecessary and Risky**

17 In Decision No. 66849, the Commission authorized the Company to collect
18 roughly \$42,000 per year in an accrual of maintenance expense associated with the Desert
19 Wells Pumping Station.¹³⁹ This pump station is the sole means of delivering water to the
20 Town of Superior and it requires special pumps to ensure adequate delivery pressure.¹⁴⁰
21 In order to maintain reliable operation, this equipment needs to be rebuilt every several
22 years at a current estimated cost of as much as \$150,000.¹⁴¹ Although the Company hopes
23 to eventually replace this system, these maintenance expenses will continue to occur, and

24 ¹³⁸ Ex. A-20 at 26.

25 ¹³⁹ Ex. A-9 at 26.

26 ¹⁴⁰ *Id.*

¹⁴¹ *Id.*

1 the Commission-approved accrual account allows the Company to match this expense
2 with amounts accrued for that exact purpose.¹⁴²

3 Staff did not deal with this issue in their direct filing. But in surrebuttal testimony,
4 Staff sets forth another “normalization” recommendation – normalization of the Desert
5 Wells Pump Station Maintenance Account.¹⁴³ According to Staff, this account is very
6 similar to the Company’s Tank Maintenance Account, and not wanting to leave it out,
7 Staff “normalized” this expense too. According to Staff, it is more appropriate to
8 normalize this expense, and Staff’s number is over \$11,000 more than the Company’s
9 annual accrual.¹⁴⁴

10 Staff misses the point. At \$41,000 a year, the Company will accrue the funds its
11 needs to maintain and repair facilities that require expenditures in the hundreds of
12 thousands of dollars every several years. Under Staff’s approach, the Company will
13 collect \$53,000 per year while the rates are in effect. But the key flaw in Staff’s
14 “normalization” method would become clear if, in the next test year, the Company only
15 incurs \$5000 that year, the amount would be reset in that rate case to \$5000. In other
16 words, Staff’s method will ensure the Company does not recover the funds necessary to
17 cover the Desert Wells Pumping Station maintenance expense. This unnecessarily places
18 the water supply for the Town of Superior at significant risk.

19 **B. Staff’s Recommended CIAC Amortization Should Not Be Adopted**

20 Staff calculated a CIAC amortization rate based on the weighted average
21 depreciation rate for each system.¹⁴⁵ Staff’s CIAC amortization rate is based on a
22 composite rate which includes all depreciable plant accounts, including those accounts
23 such as office furniture, tools, shop and garden equipment, and computers, which do not

24 ¹⁴² Ex. A-22 at 22-24.

25 ¹⁴³ Ex. A-25 at 15-17.

26 ¹⁴⁴ *Id.*

¹⁴⁵ Ex. S-25 at 18.

1 typically include contributed plant.¹⁴⁶ In other words, Staff made up an amortization rate
2 that does not reflect the actual useful life of contributed plant. Staff claimed that the
3 Company could not identify the specific CIAC balances associated with each plant
4 account per system.¹⁴⁷ However, as Mr. Reiker testified at the hearing, an examination of
5 the developer-funded CWIP ledgers, which Staff was provided, indicates that the
6 composite depreciation rate for developer-funded (i.e. contributed) plant is 1.999%.¹⁴⁸
7 Additionally, Mr. Reiker provided a calculation in his rejoinder testimony which
8 confirmed the 2.00% CIAC amortization rate previously approved by the Commission in
9 Decision Nos. 66849 and 68302.¹⁴⁹ Notwithstanding this, the Company is not required by
10 the Commission to come up with specific CIAC balances. The Company follows the
11 Commission's directive in Decision No. 66849, wherein the Commission agreed with the
12 Company that "the annual CIAC amortization rate should reflect the annual depreciation
13 associated with plant accounts that include contributions".¹⁵⁰ The Commission approved
14 a 2% amortization rate in that case, and the Company utilized it in the test year in this
15 case. Staff has returned to the same methodology the Commission previously rejected in
16 that case.¹⁵¹ The Commission should reject Staff's methodology again here.

17 **C. RUCO's Opposition to Requested Rate Case Expense Is Unsupported**

18 This rate case was ordered by the Commission to be filed using all 17 of the
19 Company's systems, each requiring a determination of fair value rate base and operating
20 expenses in order to set rates. The parties, 5 of them participating, have made numerous
21 filings of testimony, extensive schedules, including 17 different sets of schedules for the
22

23 ¹⁴⁶ Ex. A-22 at 25.

24 ¹⁴⁷ *Id.*

25 ¹⁴⁸ Tr. at 571-572.

26 ¹⁴⁹ Ex. A-22, Sch. JMR-RJ4.

¹⁵⁰ Ex. A-20 at 40 (*citing* Decision No. 66849).

¹⁵¹ *Id.*

1 17 separate systems, and other exhibits, including significant post-hearing filings
2 requested by the Chairman and presiding ALJ. The Commission conducted nine days of
3 hearings with 18 witnesses, followed by the filing of final schedules and extensive
4 briefing. For all this, the Company sought \$500,000 in rate case expense to be amortized
5 over three years.¹⁵² The Company's request was based on consideration of the rate case
6 expense authorized in the Company's last three group rate cases and the amounts actually
7 incurred, with due consideration for the issues and complexity of the proceedings.¹⁵³ Staff
8 made no adjustment to the Company's rate case expense. RUCO arbitrarily reduced rate
9 case expense to \$300,000.¹⁵⁴

10 RUCO's explanation for its \$200,000 reduction to the Company's rate case expense
11 is severely lacking. To be clear from the outset, by its nature rate case expense must be
12 estimated during much of the proceeding. But on the merits, all RUCO's witness had to
13 say before the hearing that its recommendation was based on information provided by the
14 Company, and, that RUCO would revisit its recommendation after the hearings.¹⁵⁵ At the
15 hearing, RUCO's witness called this position a "placeholder" and said the Company will
16 have a chance to argue about RUCO's recommendation later.¹⁵⁶ Whether RUCO is being
17 intentionally or inadvertently evasive, the result is the same – RUCO has neither
18 explained its position nor provided any basis to challenge the Company's and Staff's
19 position that \$500,000 in rate case expense is reasonable for this proceeding. RUCO
20 submitted no evidence in this record and it cannot sustain any burden of proof on this
21

22 ¹⁵² Ex. A-18 at 24-25.

23 ¹⁵³ *Id.* See also Ex. A-20 at 44-45.

24 ¹⁵⁴ *E.g.*, RUCO Final Schedules, Sch. TJC-13 (for each system). Despite repeatedly testifying
25 that RUCO would revisit/update its position on rate case expense post-hearing, nowhere in it 17
26 different schedules does RUCO update or revisit its position on rate case expense.

¹⁵⁵ Ex. R-27 at 20-21.

¹⁵⁶ Tr. at 1028-30.

1 issue.¹⁵⁷ Accordingly, the Company's request, which Staff agrees is reasonable under the
2 facts and complex circumstance of this case, is supported by the evidence and should be
3 approved.

4 **D. Adjuster Mechanisms Are a Well Established Ratemaking Tool and**
5 **Use of Such Mechanisms Is Warranted at this Time**

6 In this case, the Company seeks approval of a purchased power adjustment
7 mechanism ("PPAM"), a purchased water adjustment mechanism ("PWAM"), and a
8 purchased fuel adjustment mechanism ("PFAM"), or, in the alternative, approval of an
9 attrition adjuster mechanism.¹⁵⁸ The purpose of these adjusters is to allow the Company
10 to recover changes in certain operating expenses that fluctuate unpredictably outside of
11 the Company's control, thereby reflecting the current cost of service, and allowing the
12 Company a more realistic opportunity to achieve its authorized rate of return. As Mr.
13 Garfield explained in his testimony, these mechanisms are well-established ratemaking
14 tools that work bilaterally to help keep the utility's revenue stable in the face of changing
15 costs that are beyond the Company's control, and without the need for numerous costly
16 and time-consuming rate case proceedings.¹⁵⁹

17 The continued opposition to these adjusters by Staff and RUCO is troubling. This
18 is particularly so given that the following facts are undisputed:

- 19 • Adjuster mechanisms may be approved by the Commission only if
20 approved in the context of a general rate case.
21 • This is a general rate case.

22 ¹⁵⁷ Notwithstanding RUCO's unfulfilled commitment to revisit its recommendation, it must not
23 be allowed to come in now, at the briefing stage, and attempt to present evidence to support its
24 recommended disallowance. Not only has that time passed, but the Company went out of its way
25 to invite RUCO to provide evidence while the record was open and cross-examination possible.
Id. RUCO waived that chance and would be abusing the Commission's process to attempt to
submit any evidence at this stage of the proceeding.

26 ¹⁵⁸ Ex. A-1 at 13-26.

¹⁵⁹ See, e.g., Ex. A-2 at 3-4, Ex. WMG-RB1, Ex. WMG-RB2.

- 1 • The Commission has approved numerous adjuster mechanisms for
- 2 utilities under its regulation, including Arizona Water.
- 3 • In the past few years alone, the Commission has approved numerous
- 4 adjusters for Arizona's gas and electric utility providers.
- 5 • The Commission has approved purchased water and purchased
- 6 power adjustment mechanisms for the Company in the past.
- 7 • Adjuster mechanisms benefit ratepayers as well as utilities because
- 8 they allow decreases in costs as well as increases to be immediately
- 9 passed on to customers.
- 10 • The Company does not have control over the rates charged for
- 11 electric power or purchased water.
- 12 • There is no evidence in the record that the Company is not taking all
- 13 reasonable steps to control its costs of water, power, fuel, and other
- 14 operating expenses.
- 15 • The Company has been forced to delay critical infrastructure
- 16 upgrades and improvements, and will need to spend \$19 million per
- 17 year over the next several years to catch up.
- 18 • A healthy utility company requires a reasonable and reliable level of
- 19 revenues and earnings in order to attract capital for future
- 20 investments. The Company's revenues and earnings, however, have
- 21 been inadequate.
- 22 • Adjuster mechanisms will help to stabilize the Company's earnings
- 23 and alleviate revenue erosion between rate proceedings.
- 24 • Adjuster mechanisms have the potential to lengthen the interval
- 25 between rate cases, aiding an already overburdened Commission and
- 26 Staff by reducing the number of rate cases, and the cost of rate case
- expense to ratepayers and utilities.
- All expenditures by the Company, including expenses that might
- give rise to rate changes under an adjuster mechanism, are subject to
- Commission scrutiny and review.
- The Commission is under extreme pressure from the State's budget
- crises and is generally finding itself unable to process rate cases
- within the agency's own time-clock rules.
- Despite these extraordinary times, the Company's obligation to
- provide safe and reliable service is unchanged.¹⁶⁰

Given these undisputed facts, an objective observer might wonder why the

¹⁶⁰ Ex. A-1 at 13-20; Ex. A-2 at 2-7; Ex. A-5 at 7-9.

1 Company's request for adjusters is so hotly contested. It is hard to imagine that Staff and
2 RUCO would so earnestly advocate measures that weaken the financial health of the
3 utility. Yet in this case, the proposed adjusters could not be used by the Company until
4 2011. At the same time, however, the Company's major power providers (most of which
5 are regulated by this Commission) have been authorized to increase their rates on an
6 almost continual basis for the past seven to eight years, with additional rate increases
7 expected to be authorized next year.¹⁶¹ Given the significance of these expenses, the
8 Company will immediately suffer earnings attrition.

9 The bottom line is that there is no sound policy or evidentiary reason for rejecting
10 the Company's requested adjuster mechanisms. These mechanisms are widely authorized
11 by regulatory commissions, including commissions that regulate the publicly traded
12 utilities in the water utility sample group used in this case by the parties to estimate the
13 cost of equity.¹⁶² The California Public Utilities Commission, for example, recently
14 authorized water utilities to implement a water revenue adjustment mechanism to ensure
15 stable revenues and earnings in connection with implementing conservation-oriented
16 tiered rates.¹⁶³ The National Regulatory Research Institute as well as the NARUC's Board
17 of Directors have endorsed the use of adjuster mechanisms like those proposed by the
18 Company to help the water industry meet the challenges of infrastructure replacement.¹⁶⁴
19 In addition, the Company had adjusters in place for all of the Company's systems for over
20 20 years, and Commission-approved PPAM and PWA remain in effect for its Northern
21 Group systems. There is no evidence that these adjusters failed to function fairly and
22 properly, created inequities or led to other problems. Therefore, the Company's
23 adjustment mechanisms should be approved.

24 ¹⁶¹ Ex. A- 5 at 7; Tr. at 196-97.

25 ¹⁶² Ex. A-41 at 17-18.

26 ¹⁶³ Ex. A-48 at (unnumbered) 1.

¹⁶⁴ Ex. A-2, WMG-RB1, WMG-RB2.

1 **IV. COST OF CAPITAL AND RATE OF RETURN**

2 **A. Introduction**

3 The Company's proposed rate of return on its original cost rate base is 9.2%.¹⁶⁵
4 This return is determined by use of the weighted average cost of the capital supporting the
5 Company's rate base, as follows:

6

	<u>Dollar Amount</u>	<u>Percentage</u>	<u>Cost Rate</u>	<u>Weighted Cost</u>
7 Short-term Debt	\$7,300,000	4.80%	3.00%	0.14%
8 Long-term Debt	75,000,000	49.35%	6.83%	3.37%
9 Equity	<u>66,671,689</u>	<u>45.85%</u>	12.40%	<u>5.68%</u>
10 Total	\$151,971,689	100.00%		9.20% ¹⁶⁶

11

12
13 Staff, in contrast, proposes a rate of return of only 8.1%, while RUCO proposes an even
14 lower rate of return, 7.33% Staff, RUCO and the Company agree that the Company's
15 December 31, 2008 capital structure should be used to determine the weighted average
16 cost of capital, including short-term debt (at a cost of only 3.00%) used to finance plant
17 constructed during 2008, i.e., a full year outside the test year.¹⁶⁷ The parties also agree on
18 the cost of the Company's short- and long-term debt.

19 The primary difference in the rate of return concerns the cost of equity proposed by
20 each party. Consequently, the discussion that follows addresses that issue.

21 **B. The Applicable Legal Standard**

22 The Constitution guarantees utilities such as Arizona Water an opportunity to earn
23 the reasonable cost of conducting their business, including a return on its property devoted

24 ¹⁶⁵ Company Final Sch. A-1 (Total Company), D-1.

25 ¹⁶⁶ *Id.*

26 ¹⁶⁷ Ex. S-22 at 14-15 (recommending the use of the Company's actual December 31, 2008 capital structure); Ex. R-32 at 2-3 (same).

1 to public service that is sufficient to (1) allow the utility to attract capital on reasonable
2 terms; (2) maintain the utility's financial integrity; and (3) allow the utility an opportunity
3 to earn a return that is commensurate with the returns earned by enterprises with
4 comparable risks. The seminal case stating these requirements is *Bluefield Waterworks*, in
5 which the Supreme Court explained:

6 A public utility is entitled to such rates as will permit it to earn
7 a return on the value of the property which it employs for the
8 convenience of the public equal to that generally being made
9 at the same time and in the same general part of the country on
10 investments in other business undertakings which are attended
11 by corresponding risks and uncertainties; but it has no
12 constitutional right to profits such as are realized or
13 anticipated in highly profitable enterprises or speculative
14 ventures. The returns should be reasonably sufficient to
15 ensure confidence in the financial soundness of the utility and
16 should be adequate under efficient and economical
17 management, to maintain and support its credit and enable it to
18 raise the money necessary for the proper discharge of its
19 public duties.¹⁶⁸

20 The Supreme Court also stated: "Rates which are not sufficient to yield a reasonable
21 return on the value of the property used *at the time it is being used to render the service*
22 are unjust, unreasonable and confiscatory, and their enforcement deprives the public
23 utility company of its property in violation of the Fourteenth Amendment."¹⁶⁹ Thus, the
24 rates set in this proceeding must be sufficient to allow the Company to earn its authorized
25 rate of return during the period the rates will be in effect.

26 In a more recent case, the Supreme Court repeated these requirements, explaining:

[T]he investor interest has a legitimate concern with the
financial integrity of the company whose rates are regulated.
From the investor or company point of view it is important

¹⁶⁸ *Bluefield Waterworks & Improvement Co. v. Pub. Serv. Comm'n*, 262 U.S. 679, 692-93 (1923).

¹⁶⁹ *Id.* at 690 (emphasis supplied).

1 that there be enough revenue not only for operating expenses
2 but also for capital costs of the business. These include
3 service on the debt and dividends on the stock.... By that
4 standard the return to the equity owner should be
5 commensurate with returns on investments in other
6 enterprises with corresponding risks. The return, moreover,
should be sufficient to assure confidence in the financial
integrity of the enterprise, so as to maintain its credit and to
attract capital.¹⁷⁰

7 Each of the cost of the capital witnesses has testified that *Bluefield Waterworks* and *Hope*
8 *Natural Gas* are authoritative precedent that this Commission must follow.¹⁷¹

9 The Commission is also required to consider the specific risks affecting the utility's
10 operations and earnings, including risks created by the regulatory standards and
11 requirements to which the utility is subject. The Supreme Court has stated:

12 [T]he impact of certain rates can only be evaluated in the
13 context of the system under which they are imposed. One of
14 the elements always relevant to setting the rate ... is the
15 return investors expect given the risk of the enterprise. ...
16 The risks a utility faces are in large part defined by the rate
methodology because utilities are virtually always public
monopolies dealing in an essential service, and so relatively
immune to the usual market risks.¹⁷²

17
18 In short, "[r]egulation can increase business risk if it does not provide adequate returns
19 and/or if it does not provide the utility with the opportunity to earn a fair rate of return."¹⁷³
20 Consequently, the impact of the Commission's particular rate-setting system on the
21 utility's ability to actually earn its authorized rate of return at the time service is provided
22 must be taken into account in determining a fair rate of return.

23
24 ¹⁷⁰ *Federal Power Comm'n v. Hope Natural Gas*, 320 U.S. 591, 603 (1944).

¹⁷¹ See Ex. S-22 at 5-6 (discussing *Bluefield* and *Hope*); Ex. R-32 at 5-6 (same).

¹⁷² *Duquesne Light Co. v. Barasch*, 488 U.S. 299, 314-15 (1989).

¹⁷³ Roger A. Morin, *New Regulatory Finance* 38-39 (Public Utility Reports, Inc. 2006)
(hereinafter "*Morin*").

1 As explained below, the Company proposes an adjustment to the cost of equity to
2 account for the additional risk created by Arizona's particular ratemaking system. Staff
3 and RUCO, however, have ignored this additional risk. Instead, they have proposed
4 equity costs based on their respective sample groups of publicly traded utilities that are
5 well below the Company's current cost of equity and will not allow Arizona Water an
6 opportunity to actually earn its authorized rate of return during the period in which rates
7 will be in effect.

8 In fact, under Staff's proposed rates, the Company would have earned returns of
9 only 6.7% on year-end invested capital and 6.4% on year-end common equity in 2008.¹⁷⁴
10 Under RUCO's proposed rates, the Company would have earned even lower returns of
11 6.3% on year-end invested capital and 5.5% on year-end common equity.¹⁷⁵ To put these
12 recommendations in perspective, the yield on investment grade (Baa) utility bonds was in
13 the 7.5% to 8.0% range at the time the Staff and RUCO witnesses prepared their principle
14 cost of capital testimony.¹⁷⁶ Furthermore, in May 2009 – when Mr. Parcell and Mr.
15 Rigsby prepared their cost of equity estimates – the California Public Utilities
16 Commission issued a decision authorizing three large, publicly traded water utilities to
17 borrow additional long-term debt at an interest rate of 8.3%.¹⁷⁷ A return that is
18 substantially less than the cost of debt violates the *Bluefield-Hope* standard.

19 **C. The Company's Cost of Equity Is Reasonable and Should be Adopted**

20 The cost of equity estimates submitted by the parties are as follows:

21 Company	12.4%
22 Staff normal method (unadjusted for risk)	11.2%
23 Parcell	10.0%

24 ¹⁷⁴ Ex. A-22, Sch. JMR-1.

25 ¹⁷⁵ *Id.*

26 ¹⁷⁶ Ex. S-22, Sch. 2 at 4; Ex. R-32, Attachment D.

¹⁷⁷ Ex. A-42 at 46.

8.33%

There are several obvious indications that the recommendations of Staff and RUCO are too low and fail to accurately reflect current investment risk and the Company's risk.

¹⁷⁸ Decision No. 66849 at 20. “Beta” is an estimate of a stock’s market risk (i.e., the risk that cannot be eliminated by diversification). Thus, an increase in a stock’s beta indicates that the stock has become more risky relative to the market as a whole, and investors would require a greater return as a result. *See* Ex. R-32 at 28, n. 9.

¹⁸⁰ Tr. at 1297.

¹⁸² *Morin* at 81.

1 expected rate of return on that investment and vice versa.”¹⁸³

2 Second, the risk of the market has increased, and the cost of equity is therefore
3 higher as a result. Dr. Zepp explained that the cost of equity for Staff’s sample group of
4 water utilities estimated with the discounted cash flow (“DCF”) model has increased by
5 100 basis points since mid-2008 using Dr. Zepp’s inputs and 60 basis points using Staff’s
6 inputs.¹⁸⁴ Dr. Zepp explained that the opportunity cost in terms of market performance is
7 now higher because dividend yields have increased while analysts’ forecasts of growth
8 have remained the same.¹⁸⁵ In addition, the current market risk premium estimates – a
9 critical input in the CAPM – have increased, indicating higher equity costs.¹⁸⁶ Again,
10 using Staff’s CAPM method for comparison purposes, the current market risk premium is
11 13.6% as compared to the 7.8% market risk premium estimated in 2005 by Staff and
12 accepted by the Commission in the Company’s Western Group case.¹⁸⁷

13 Third, there are other unbiased indications that the Staff and RUCO
14 recommendations are too low. Value Line publishes forecasts of returns on common
15 equity for larger publicly traded companies, including the three water utilities in RUCO’s
16 sample group. Value Line projects the following returns on equity for those utilities:

17	American States Water	12.0%
18	Aqua America	11.5%
19	California Water	<u>12.0%</u>
20	Average	11.8% ¹⁸⁸

21
22 ¹⁸³ Ex. R-32 at 29. *See also* Ex. S-22 at 21 (explaining that “the CAPM specifically recognizes
the risk of a company or industry (*i.e.*, beta)”).

23 ¹⁸⁴ Ex. A-42 at 7-8. *See also* Tr. at 1297, 1321-22, 1326.

24 ¹⁸⁵ Ex. A-43 at 5-6.

25 ¹⁸⁶ *Id.* at 6. As discussed below, Mr. Parcell and Mr. Rigsby have not considered current market
risk in their CAPM estimates, which conflicts with Commission precedent and undermines their
estimates of Arizona Water’s cost of equity.

26 ¹⁸⁷ *Compare* Ex. A-42, Sch. TZ-1 *with* Ex. A-45, Sch. AXR-8.

¹⁸⁸ Ex. A-48. It should be noted that these utilities are also included in Staff’s sample group and

1 All of these utilities are significantly larger than Arizona Water and, as Dr. Zepp testified,
2 operate in jurisdictions such as California and Pennsylvania that use projected or partially
3 projected test years, and authorize surcharges and other cost recovery mechanisms which
4 allow the recovery of increases in costs outside a general rate case.¹⁸⁹

5 Also, the Commission recently authorized a 10.0% return on equity for Southwest
6 Gas Corporation, based on the recommendation of Staff's cost of capital witness, Mr.
7 Parcell.¹⁹⁰ Moreover, in August, Mr. Parcell provided cost of capital testimony for Staff
8 in the pending rate case for UNS Gas, Inc., again recommending a 10.0% return on
9 equity.¹⁹¹ The water utility sample group, has significantly more market risk than the gas
10 utility sample group, and therefore has a higher cost of equity.¹⁹² As shown below, the
11 indicated cost of equity for Arizona Water, based on the Commission's recent decision for
12 Southwest Gas and Mr. Parcell's contemporaneous testimony in the UNS Gas rate case, is
13 11.3%, which is much higher than the returns on equity being recommended by Staff and
14 RUCO in this case.

15 Finally, Arizona Water's capital structure is much different today than in its
16 previous rate cases. In the Company's Eastern Group rate case, the Company's capital
17 structure contained 33.9% debt.¹⁹³ In its Western Group rate case, the Company's capital
18 structure contained 26.6% debt.¹⁹⁴ Currently, the Company's capital structure contains
19 54.2% debt – a far more leveraged, and therefore riskier capital structure than the
20

21 _____
22 the sample group used by Mr. Parcell.

23 ¹⁸⁹ Ex. A-41 at 16-19.

24 ¹⁹⁰ Decision No. 70665 (Dec. 24, 2008).

25 ¹⁹¹ See Direct Testimony of David C. Parcell, Docket No. G-04204A-08-0571 (June 8, 2009).

26 ¹⁹² As discussed below, RUCO's gas utility sample has a beta of 0.67, as compared to the beta of 0.82 for RUCO's water utility sample. See Ex. R-32, Sch. WAR-7.

¹⁹³ Decision No. 66849 at 16.

¹⁹⁴ Decision No. 68302 at 30.

1 Company had in previous cases.¹⁹⁵ In contrast, the sample water utilities have capital
2 structures containing about 50% debt, i.e., less than Arizona Water.¹⁹⁶

3 These factors, which are not in dispute, show that Arizona Water's cost of equity is
4 substantially greater than the recommendations of Staff and RUCO. Moreover, under the
5 recommendations of Staff and RUCO, the Company's pre-tax interest coverage would be
6 barely above 2.0x – well *below* the ratios of the publicly traded water utilities used to
7 estimate the Company's cost of equity.¹⁹⁷ The recommendations of Staff and RUCO
8 would not allow Arizona Water to attract capital on terms equivalent to the larger publicly
9 traded water utilities used to estimate the cost of equity, and therefore violate the
10 comparable earnings, financial integrity and attraction of capital standards set forth in
11 *Bluefield Waterworks* and *Hope Natural Gas*.

12 **D. The Methods Used by Dr. Zepp Are Appropriate and Should be**
13 **Adopted in this Case**

14 **1. Summary of Dr. Zepp's Cost of Equity Estimates**

15 Dr. Zepp estimated Arizona Water's cost of equity using the two market-based
16 finance models, the DCF and the CAPM, on which the Commission has relied exclusively
17 in determining the return on equity in recent water and wastewater utility rate cases.¹⁹⁸
18 Dr. Zepp also used the same six publicly traded water utility sample group normally used
19 to estimate the cost of equity, American States Water, Aqua America, California Water
20 Service, Connecticut Water Service, Middlesex Water Company and SJW Corporation.¹⁹⁹

21 ¹⁹⁵ Tr. at 1309-10, 1319-20.

22 ¹⁹⁶ Ex. S-22, Sch. 4; Ex. R-32,

23 ¹⁹⁷ *Id.* at 6; Ex. A-48 (Value Line reports). Value Line reports that American States Water Co.,
24 Aqua America, Inc., and California Water Service Group have interest coverage ratios of 3.4x,
25 3.4x and 4.4x, respectively.

26 ¹⁹⁸ Ex. A-41 at 5.

¹⁹⁹ See Decision No. 68302 at 32, n. 11; Ex. A-44. In addition to Arizona Water's prior cases,
other recent decisions using these six sample water utilities include *Arizona-American Water Co.*
(*Sun City and Sun City West Wastewater Districts*), Decision No. 70209 at 27 (March 28, 2008);
Black Mountain Sewer Corp., Decision No. 69164 at 24, n. 9 (Dec. 5, 2006); *Chaparral City*

1 Dr. Zepp estimated the cost of equity using the constant growth DCF model. First,
2 because the DCF model requires the best available estimates of growth investors expect in
3 the future, and because analysts are now expecting future growth rates to be higher than
4 historic growth rates, Dr. Zepp relied primarily on analysts' consensus estimates of
5 growth reported by Zacks, Thompson First Call, and Value Line.²⁰⁰ Dr. Zepp's initial
6 DCF estimates using this approach (based on data from early 2008) indicated an equity
7 cost range of 11.8% to 11.9% for the Staff water utility sample group, while his updated
8 DCF estimates using this approach indicated an equity cost of 12.8% for the same water
9 utility sample.²⁰¹ Second, Dr. Zepp performed a set of DCF estimates using an approach
10 similar to Staff's approach, which gives equal weight to past growth and projections of
11 growth.²⁰² Dr. Zepp's initial estimates using this approach (based on data from early
12 2008) indicated an equity cost of 11.3% to 11.4%, while his updated estimates indicated
13 an equity cost in the range of 11.9% to 12% for the Staff water utility sample group.²⁰³ As
14 Dr. Zepp explained in his rebuttal testimony, these increases show that the cost of equity
15 has increased since his initial estimates were made in 2008.²⁰⁴

16 Dr. Zepp also performed estimates using the traditional version of the CAPM. As
17 the risk-free rate, he used the expected return on long-term treasury bonds.²⁰⁵ He also
18 used the average of the betas published by Value Line, while noting that there is a
19 downward bias in Value Line's beta estimates for small, infrequently traded companies,
20

21 *Water Co.*, Decision No. 68176 at 18, n. 4 (Sept. 30, 2005).

22 ²⁰⁰ Ex. A-41 at 26-29, Table 9; Ex. A-42 at 8-9, Rebuttal Table 3. Dr. Zepp excluded Connecticut
23 Water because its forecast growth rate, 15%, while not unreasonable, is nevertheless substantially
24 higher than the other growth rates. *Id.*

25 ²⁰¹ Ex. A-41 at 30, Table 10; Ex. A-42 at 9, Rebuttal Table 4.

26 ²⁰² Ex. A-41 at 30-31, Table 11; Ex. A-42 at 8-9, Rebuttal Table 6.

²⁰³ *Id.*

²⁰⁴ Ex. A-42 at 7-8.

²⁰⁵ Ex. A-41 at 32, Table 12.

1 such as Connecticut Water, Middlesex Water and SJW Corp., which causes the CAPM to
2 understate the cost of equity.²⁰⁶ Based on these inputs, Dr. Zepp prepared two different
3 CAPM estimates, one using the historic (long-horizon) average market risk premium for
4 the period 1926-2007 as reported in the Ibbotson SBBI 2008 Valuation Yearbook
5 (published by Morningstar), and the second using an approach similar to Staff's approach,
6 in which a DCF analysis is utilized to derive a current market risk premium.²⁰⁷ His
7 CAPM estimates using these approaches ranged from 11.8% to 12.5% for the Staff water
8 utility sample.²⁰⁸

9 Dr. Zepp also testified that Arizona Water faces certain risks that, from an
10 investor's point of view, must be accounted for in setting a fair rate of return in this
11 case.²⁰⁹ The additional risks faced by Arizona Water include risk relating to significant
12 financing requirements for plant construction. As Mr. Garfield explains, that risk is the
13 result of deteriorating earnings and the need to build significant additional infrastructure
14 facilities that were deferred due to the need to construct arsenic treatment plant.²¹⁰ In
15 addition, Arizona Water consists of 17 separate water systems, many of which are very
16 small and have high capital investment per customer.²¹¹ In contrast to larger, publicly
17

18 ²⁰⁶ *Id.* at 32-33. *See also Morin* at 81-82 (explaining that for securities for which there is only
19 periodic trading, beta estimates are downward biased). All of the water utilities in the Staff
20 sample group are small-cap or micro-cap stocks, with the exception of Aqua America, and
21 therefore the CAPM likely understates their cost of equity. Ex. A-41 at 33-34

22 ²⁰⁷ Ex. A-41 at 33-34, Tables 12 and 13.

23 ²⁰⁸ *Id.* Dr. Zepp did not update his CAPM estimates in his rebuttal testimony because, as he
24 explained, as a result of the severe decline in the stock market that occurred in late 2008 and early
25 2009, there are serious concerns about obtaining a reasonable proxy for the zero-beta asset (i.e.,
26 the risk-free rate) and estimating the current market risk premium. He testified that the risk-free
rate exceeds the expected yields on long-term treasuries and that the current market risk premium
is much greater than the historic market risk premium. Ex. A-42 at 6-7, 10-11, 39-40. However,
Dr. Zepp did use the Staff CAPM method to estimate the cost of equity, which, as discussed
below, is 12.6%. *Id.* at 13-14, Sch. TZ-1.

²⁰⁹ Ex. A-41 at 15-24; Ex. A-42.

²¹⁰ Ex. A-1 at 11-13; Ex. A-41 at 14-15.

²¹¹ Ex. A-1 at 27-31.

1 traded utilities, Arizona Water is closely-held and must raise capital on its own.²¹²
2 Finally, certain aspects of Arizona's rate-setting system create additional risk when
3 compared to other jurisdictions, including this jurisdiction's use of historic test years with
4 very limited out-of-period adjustments, the inability to obtain recovery of costs outside a
5 general rate case in which "fair value" is found, and the requirement that water utilities
6 have inverted-block rate designs to encourage reductions in customer water use.²¹³ Dr.
7 Zepp recommends that the Company's cost of equity be increased by at least 50 basis
8 points above the cost of equity for Staff's water utility sample group. Most of those
9 utilities operate in jurisdictions such as California that use forward-looking test years, and
10 authorize adjustment mechanisms and balancing accounts to recover purchased power,
11 water and other expenses.²¹⁴

12 **2. The Cost of Equity Produced by Staff's Normal Methods**
13 **Indicates that the Cost of Equity Is 11.2%**

14 Dr. Zepp also prepared an equity cost estimate using Staff's normal methods and
15 inputs to determine what cost of equity would be indicated, and how such estimate
16 compares to the recommendations of Mr. Parcell and Mr. Rigsby.²¹⁵ As Dr. Zepp
17 explained, in prior Arizona rate cases in which he has testified, including the prior rate
18 cases for Arizona Water's Western Group and Eastern Group as well as Chaparral City
19 Water Company's 2005 rate case,²¹⁶ Staff used the DCF and CAPM models to estimate
20 the cost of equity. In each of these cases, Staff's methods and inputs were approved and

21 ²¹² Ex. A-42 at 40-41.

22 ²¹³ Ex. A-41 at 16-21.

23 ²¹⁴ *Id.* at 16-17, 23; Ex. A-1 at 31-32; Ex. A-48 at (unnumbered) 1, 3.

24 ²¹⁵ Ex. A-42 at 13-14, schedules at Tab 2.

25 ²¹⁶ *Chaparral City Water Co.*, Decision No. 68176, Docket No. W-02113A-04-0616 (Sept. 30,
26 2005). Notably, the water utility in that case appealed the authorized rate of return and
challenged the methodology used by Staff and approved by the Commission. The Arizona Court
of Appeals affirmed that portion of the decision. *See Chaparral City Water Co. v. Ariz. Corp.*
Comm'n, No. 1 CA-CC 05-002 (Feb. 13, 2007).

1 adopted by the Commission. Here, Staff's normal method produces a cost of equity of
2 11.2%, while Mr. Parcell recommends a cost of equity of only 10.0% and Mr. Rigsby
3 recommends an even lower cost of equity, 8.33% – an equity return equivalent to the cost
4 of new long-term debt.²¹⁷

5 The primary differences between Mr. Parcell's methodology and the methodology
6 routinely used by Staff and adopted by the Commission are as follows:

- 7 • Mr. Parcell used a water utility sample group that differs from that used by
8 Staff and approved by the Commission in prior rate cases, including Arizona
9 Water's prior rate cases.
- 10 • Mr. Parcell did not use a multi-stage DCF model, but relied solely on a
11 constant-growth DCF model.
- 12 • Mr. Parcell eliminated Staff's estimate of the current market risk premium
13 from his CAPM estimate, and substituted a second historic market risk
14 premium, which double-counts historic market risk while ignoring current
15 market risk.
- 16 • Mr. Parcell used a geometric mean to estimate the historic market risk
17 premium in his CAPM estimate, while Staff uses the conceptually correct
18 arithmetic mean.
- 19 • Mr. Parcell used the historic total return on Treasuries rather than their
20 historic income return to compute market risk premiums, while Staff uses
21 the conceptually correct income return.
- 22 • Mr. Parcell used a comparable earnings method to derive a third estimate of
23 the cost of equity, even though the Commission has rejected the use of
24 comparable earnings in prior rate cases, including Arizona Water's Western
25 Group case.²¹⁸

26 Given these differences, one can only conclude that Mr. Parcell selected methods

217 Ex. A-42 at 46. The California Public Utilities Commission recently authorized California Water Service Company and Golden States Water Company (the primary subsidiary of American States Water) to incur new long-term debt at an interest rate of 8.3%.

218 Ex. A-42 at 14-15. See also Ex. A-44 (Staff Eastern Group schedules); Ex. A-45 (Staff Western Group schedules); Ex. A-46 (final Staff schedules in *Chaparral City Water Co.*, Docket No. W-02113A-07-0551 (filed Jan. 21, 2009).

1 and inputs intended to depress the cost of equity for Arizona Water.²¹⁹ No evidence has
2 been presented in this case demonstrating that the methods Staff has used consistently in
3 numerous water and wastewater utility rate cases fail to produce a reasonable estimate of
4 the cost of equity. In fact, in Chaparral City Water Company's recent case, Gordon Fox,
5 Staff's Public Utilities Analyst Manager, who has been employed by the Commission for
6 15 years, testified that the methods used by Staff to estimate the cost of equity are
7 sound.²²⁰ Therefore, there is no legitimate reason for Staff to depart from its normal
8 methods.

9 Arbitrarily switching back and forth between methodologies, as Staff proposes in
10 this case, is unlawful, as the Supreme Court has stated:

11 [A] State's decision to arbitrarily switch back and forth
12 between methodologies in a way which required investors to
13 bear the risk of bad investments at some times while denying
14 them the benefit of good investments at others would raise
serious constitutional questions.²²¹

15 The same principle is applicable here. After consistently using the same methods and
16 inputs to estimate the cost of equity in prior water and wastewater rate cases, and after the
17 Commission has approved those methods and inputs in prior rate cases (including the
18 Company's prior cases), Staff is proposing to deviate from those approved methods to
19 lower the cost of equity. This arbitrary and unfair tactic conflicts with established
20 Commission-approved methodology and must be rejected by the Commission.

21 **3. Summary of the Erroneous Inputs and Methods Used by Mr.**
22 **Parcell and Mr. Rigsby**

23 Mr. Parcell, who is Staff's witness, concluded that the cost of equity for Arizona
24

25 ²¹⁹ Ex. A-42 at 15.

26 ²²⁰ *Chaparral City Water Co.*, Docket No. W-02113A-07-0551, Hearing Tr. at 490, 491-92.

²²¹ *Duquesne Light*, 488 U.S. at 315.

1 Water is within a range of 9.5% to 10.5%, and recommended that the Commission adopt
2 the mid-point of that range.²²² As Dr. Zepp explained, however, Mr. Parcell utilized
3 various techniques that bias downward his cost of equity estimates. These techniques
4 include (1) relying on geometric annual averages instead of conceptually correct
5 arithmetic annual averages to compute growth rates and expected returns;²²³ (2) failing to
6 recognize the time value of money when computing dividend yields, and failing to adopt
7 an appropriate growth rate for the first year in which dividends are paid, which depresses
8 his dividend yield calculation;²²⁴ (3) failing to include growth from external sources
9 (called "vs growth") that RUCO, Dr. Zepp, and Staff in past cases, recognize should be
10 included in sustainable growth rate estimates, and giving only 20% weight to conceptually
11 correct, forward-looking growth estimates in calculating growth for the DCF model;²²⁵ (4)
12 failing to compute a current risk premium to use in his CAPM equity cost estimates,
13 which could easily be constructed from the data he presented;²²⁶ (5) using total returns on
14 Treasury securities to estimate the historic market risk premium, rather than the
15 conceptually correct income returns;²²⁷ and (6) using a comparable earnings method, even
16 though this method was criticized by Staff and rejected by the Commission in Arizona
17 Water's prior rate case.²²⁸ As a result, Mr. Parcell's 10.0% cost of equity
18 recommendation is 120 basis points below the 11.2% cost of equity that is produced with
19 a straight-forward update of Staff's longstanding cost of equity methods.

20
21 ²²² Ex. S-22 at 3. Notably, Mr. Parcell appropriately disregards the results produced by the
22 CAPM, which, due to Mr. Parcell's inputs, produces a cost of equity of only 8.2% to 8.6% -- a
23 result equivalent to the cost of debt.

24 ²²³ Ex. A-42 at 17-20. This error is discussed in greater detail below.

25 ²²⁴ *Id.* at 24-25.

26 ²²⁵ *Id.* at 25-26; Tr. at 1427-29.

²²⁶ *Id.* at 28-29. This error is discussed in greater detail below.

²²⁷ *Id.* at 30-31. This error is discussed in more detail below.

²²⁸ *Id.* at 33-34. Staff's anomalous use of a comparable earnings approach is discussed in greater detail below.

1 Dr. Zepp corrected the errors made by Mr. Parcell and restated his DCF, CAPM
2 and comparable earnings equity cost estimates using conceptually correct methods and
3 inputs.²²⁹ These restatements indicated that the cost of equity for the water utility sample
4 group normally used by the Commission and Staff falls in a range of 11.2% to 12.3%.
5 Had Mr. Parcell recognized that Arizona Water is more risky than this sample group, his
6 equity cost estimates would indicate the Company has an equity cost that falls in a range
7 of 11.7% to 12.8%.

8 RUCO's witness, Mr. Rigsby, concluded that the Company's cost of equity is only
9 8.33% and recommended that the Commission adopt that equity cost in determining the
10 Company's rate of return.²³⁰ Given that his cost of equity is equivalent to the cost of debt,
11 Mr. Rigsby obviously utilized techniques that greatly bias downward his cost of equity
12 estimates. These techniques include: (1) using an insufficient sample of only three water
13 utilities when useful data for three other water utilities that Staff includes in its sample
14 group were available;²³¹ (2) ignoring the fact that his gas utility sample has significantly
15 less systematic (market) risk than his water utility sample group;²³² (3) using estimates of
16 internal growth (called "br growth") in his DCF estimates that are subjective and
17 understated, and failing to account for Value Line's use of year-end equity instead of
18 average equity;²³³ (4) substituting his personal opinion for the market data in estimating
19 "vs" growth (external growth) in his DCF estimates;²³⁴ (5) relying on CAPM estimates
20 that are below the cost of debt;²³⁵ (6) relying on geometric annual averages in his CAPM
21 estimates instead of conceptually correct arithmetic annual averages to compute the

22 ²²⁹ *Id.* at 27, 31-33, 36-37, and Rebuttal Tables 12, 13, 14, 15.

23 ²³⁰ Ex. R-32 at 4-5.

24 ²³¹ Ex. A-42 at 43. This point is discussed in greater detail below.

25 ²³² Ex. *Id.* at 23-24. This point is discussed in greater detail below.

26 ²³³ Ex. *Id.* at 43-44, Rebuttal Tables 17, 18.

²³⁴ *Id.* at 44-45, Rebuttal Table 18.

²³⁵ *Id.* at 46.

1 historic market risk premium;²³⁶ (7) failing to compute a current risk premium to use in
2 his CAPM equity cost estimates, notwithstanding the current volatility of the stock
3 markets;²³⁷ (8) using total returns on Treasury securities to estimate the historic market
4 risk premium, rather than the conceptually correct income returns;²³⁸ and (9) using the
5 yield on a 5-year Treasury note as the risk-free rate in his CAPM estimates rather than the
6 conceptually correct expected yield on a long-term Treasury bond.²³⁹

7 Dr. Zepp corrected the errors made by Mr. Rigsby and restated Mr. Rigsby's DCF
8 and CAPM equity cost estimates using conceptually correct methods and inputs.²⁴⁰ These
9 restatements indicated that the DCF cost of equity estimates for Mr. Rigsby's water utility
10 sample group falls in a range of 11.5% to 11.8%, while the CAPM cost of equity
11 estimates for those same utilities falls in a range of 11.6% to 11.9%.²⁴¹ Had Mr. Rigsby
12 recognized that Arizona Water is more risky than his water utility sample group, his
13 equity cost estimates would indicate the Company has an equity cost that falls in a range
14 of 12.0% to 12.4%.

15 The discussion which follows will address in more detail certain errors made by
16 Mr. Parcell and Mr. Rigsby, which depress their cost of equity estimates.

17 **E. The Parties Choice of Sample Utilities**

18 **1. The Parties' Water Utility Sample Groups**

19 As acknowledged by RUCO's witness, "a utility is entitled to earn a rate of return
20 that is commensurate with the returns on investments of firms with comparable risk."²⁴²

21 ²³⁶ *Id.* at 17-20. This error is discussed in greater detail below.

22 ²³⁷ *Id.* at 28-29. This error is discussed in greater detail below.

23 ²³⁸ *Ex. Id.* at 30-31. This error is discussed in more detail below.

23 ²³⁹ *Ex. Id.* at 46-48.

24 ²⁴⁰ *Ex. Id.* at 45-46, 48-49 and Rebuttal Tables 18, 19.

24 ²⁴¹ *Id.*

25 ²⁴² *Ex. R-32* at 17-8. As previously explained, this is one of the requirements for determining a
26 fair rate of return under the standard adopted by the Supreme Court in *Bluefield Waterworks* and
Hope Natural Gas.

1 To estimate that rate of return, Staff has consistently used, and the Commission has
2 consistently approved the use of the same six publicly traded water utilities as its sample
3 group in determining the cost of equity in water and wastewater utility rate cases.²⁴³
4 Those utilities were used by Dr. Zepp. Moreover, Mr. Parcell approved of Staff's sample
5 group in the recent Chaparral City rate case.²⁴⁴

6 In this case, however, Mr. Parcell chose to use water utilities that have experienced
7 financial problems or otherwise should not be used to estimate the cost of equity. For
8 example, Mr. Parcell has included Southwest Water Company in two of his three samples
9 despite the fact that less than 50% of Southwest Water's revenues are derived from
10 regulated activities.²⁴⁵ Moreover, Southwest Water is a financially sick company. It is
11 axiomatic that utilities (or other companies) in a financially sick condition should not be
12 used for comparison purposes in determining the cost of equity.²⁴⁶ According to the May
13 2009 AUS Utility Report, for the 12-month period ended June 30, 2008, Southwest Water
14 had *negative* earnings per share, and its dividend payout ratio, return on common equity
15 and return on total capital are "not meaningful." Value Line reports that Southwest Water
16 earned a 3.2% return on common equity in 2007 and a 0.9% return on common equity last
17 year.²⁴⁷ Consequently, Mr. Parcell's improper use of Southwest Water reduces his DCF
18 estimates.²⁴⁸ Finally, Mr. Rigsby testified that he excluded Southwest Water because

19
20 ²⁴³ See Decision No. 68302 at 32, n. 11; Ex. A-44. In addition to Arizona Water's prior cases,
21 other recent decisions using these six sample water utilities include *Arizona-American Water Co.*
22 (*Sun City and Sun City West Wastewater Districts*), Decision No. 70209 at 27 (March 28, 2008);
23 *Black Mountain Sewer Corp.*, Decision No. 69164 at 24, n. 9 (Dec. 5, 2006); *Chaparral City*
24 *Water Co.*, Decision No. 68176 at 18, n. 4 (Sept. 30, 2005).

25 ²⁴⁴ Ex. A-50 at 4.

26 ²⁴⁵ Ex A-42 at 21.

²⁴⁶ *Sun City Water Co.*, 26 Ariz. App. 304, 310, 547 P.2d 1104, 1110 (1976), *vacated on other grounds*, 113 Ariz. 464, 556 P.2d 1126 (1976) ("Companies which are used for comparison purposes must be successful and not in a financially sick condition.").

²⁴⁷ Ex. A-47. In fact, Mr. Parcell reported that Southwest Water earned a negative return on common equity in 2007, but used this utility anyway. See Ex. S-22, Sch. 8 at 1.

²⁴⁸ See, e.g., Ex. S-22, Sch. 5 at 1. Southwest Water's dividend yield is substantially less than the

1 Value Line has suspended all projections and estimates for that utility due to accounting
2 and financial statement reporting errors.²⁴⁹

3 Mr. Parcell also used Artesian Resources in his DCF estimate, but could not use
4 that utility in his CAPM estimate because it has no reported beta.²⁵⁰ He also incorrectly
5 used York Water in his CAPM estimates. York should not be used because its stock is
6 thinly traded and thus its beta estimate is known to be biased downward.²⁵¹ As a result, if
7 the goal is to base all equity cost estimates on the *same* industry sample (which is Staff's
8 normal approach), we are left with the sample group of six water utilities traditionally
9 relied upon by this Commission to determine cost of equity estimates for water and
10 wastewater utilities.

11 RUCO, in contrast, eliminated Connecticut Water Service, Middlesex Water
12 Company and SJW Corporation from its sample group, and has instead used only
13 American States Water, Aqua America and California Water Service.²⁵² Value Line
14 estimates that three large water utilities in RUCO's sample group will earn an average
15 return on common equity of 11.8% for the period 2012 to 2014 – the forward-looking rate
16 of return used by RUCO to derive its cost of capital estimate of 8.33%.²⁵³ To compensate
17 for the small number of water utilities in its sample group, RUCO also used a group of
18 publicly traded gas utilities as a proxy for Arizona Water. As explained below, however,
19 the indicated cost of equity for those utilities is substantially higher than RUCO has
20 estimated when the proper adjustment is made to account for the current difference in

21 _____
22 other water utilities, reducing the average dividend yield and the ultimate DCF estimate.

23 ²⁴⁹ Ex. R-32 at 19.

24 ²⁵⁰ Ex A-42 at 22.

25 ²⁵¹ *Id.* See also *Morin* at 81 (“For securities for which there is only periodic trading, beta
estimates are biased downward.”). As Dr. Zepp explained, because York is thinly traded, its beta
is substantially less than the remaining water utilities, lowering the equity cost estimate.

26 ²⁵² See Ex. R-32 at 18-20.

²⁵³ See Ex. A-48.

1 market risk between the water utility sample and the gas utility sample, supporting a
2 higher return on equity for Arizona Water.

3 2. RUCO's Gas Utility Sample Group

4 RUCO has proposed the use of a sample group of 10 gas distribution utilities.
5 However, these utilities are not comparable to the Company because they have
6 significantly less market risk. RUCO's water utility sample has an average beta of 0.82,
7 while RUCO's gas utility sample has an average beta of 0.67.²⁵⁴ Therefore, the water
8 utility sample has significantly more systematic (market) risk than the gas utility sample,
9 and cannot be used to estimate Arizona Water's cost of equity unless an adjustment is
10 made to account for the difference in risk, as Staff did in Arizona Water's Eastern Group
11 rate case.²⁵⁵ It is improper to simply average the cost of equity estimates, as RUCO
12 proposes.

13 At the time of the Eastern Group rate case, the average betas of the water and gas
14 sample groups were lower than they are today, with the average beta of the gas utility
15 sample being 0.69 and the average of the water utility sample being only 0.59.²⁵⁶ Using
16 its established methods and inputs, Staff estimated that the equity costs for the sample gas
17 utilities and sample water utilities were 10.3% and 9.2%, respectively.²⁵⁷ Thus, the
18 average cost of equity for the two groups was 9.8%. Consequently, if RUCO's approach
19 had been used, Arizona Water's authorized return on equity would have been 9.8% rather
20 than 9.2%.

21 Instead, Staff performed a CAPM analysis, and determined that the cost of equity
22 for the gas utilities was approximately 100 basis points higher than the sample water

23
24 ²⁵⁴ Rigsby Dt., Sch. WAR-7, p. 1.

²⁵⁵ Decision No. 66849 at 21.

25 ²⁵⁶ See Direct Testimony of Joel M. Reiker, Docket No. W-01445A-02-0619 (filed July 8, 2003)
at 26, Sch. JMR-5, Sch. JMR-16.

26 ²⁵⁷ Decision No. 66849 at 21.

1 utility group based on the difference in market risk (i.e., the average betas for each
2 industry).²⁵⁸ Therefore, Staff argued that its estimate of the gas utilities' cost of equity
3 "would require a *significant downward adjustment*" to make the two groups
4 comparable.²⁵⁹ As a result, the indicated cost of equity based on the gas utilities was
5 approximately the same as the water utility group. As acknowledged by RUCO at
6 hearing, the Commission did not reject Staff's approach and analysis,²⁶⁰ and the same
7 approach and analysis should be used in this case as well.

8 The average beta of RUCO's gas utility sample group is 0.67, while the average
9 beta of Staff's customary water utility sample group is 0.80.²⁶¹ Therefore, in this case, a
10 significant *upward* adjustment to the cost of equity for the gas utility sample group is
11 needed to account for the difference in market risk. The difference between RUCO's
12 CAPM estimate for the water utilities and the CAPM estimate for the gas utilities is 90
13 basis points.²⁶² Because of the erroneous method and inputs used by Mr. Rigsby to
14 implement the CAPM, however, which result in an average cost of equity for the water
15 utilities of only 6.7% and the average cost of equity for the gas utilities of only 5.8%, an
16 upward adjustment of 90 basis points understates the required adjustment to properly
17 reflect the gas utilities' lower investment risk. If Staff's normal CAPM method and inputs
18 are used instead,²⁶³ the result would be 130 basis points, calculated as follows:

19
20
21 ²⁵⁸ Staff estimated that the cost of equity for the gas utilities was 10.4% using the CAPM, while
22 the cost of equity for the water utilities was 9.4% – a difference of 100 basis points. *See* Direct
23 Testimony of Joel M. Reiker, Docket No. W-01445A-02-0619 (filed July 8, 2003), Sch. JMR-7,
24 Sch. JMR- 18.

25 ²⁵⁹ Direct Testimony of Joel M. Reiker, Docket No. W-01445A-02-0619 (filed July 8, 2003) at 26
26 (italics original). *See also* Decision No. 66849 at 21.

²⁶⁰ Tr. at 1396-97.

²⁶¹ Tr. at 1297. The average beta of RUCO's three water utilities is slightly higher, 0.84.

²⁶² Ex. R-32, Sch. WAR-1 at 3.

²⁶³ Based on the Staff CAPM method shown on Ex. A-42, Sch. TZ-1, but using betas of 0.67 for
the gas utility sample group and 0.80 for the water utility sample group, as explained in the text.

	<u>Rf</u>		<u>Beta</u>		<u>Rp</u>		<u>k</u>
Historic MRP	3.3%	+	0.67	x	7.0%	=	8.0%
Current MRP	4.6%	+	0.67	x	13.6%	=	<u>13.7%</u>
Average Gas Utility Sample Group							<u>10.9%</u>
Average Water Utility Sample Group							<u>12.2%</u>
Difference/Risk Adjustment							<u>+1.3%</u>

Given this difference, it is inappropriate to simply average the gas utilities' equity cost with the water utilities' equity cost, as RUCO has done. This error assumes that a typical gas utility currently has the same investment risk as a typical water utility, which is clearly not the case.

However, the gas utility sample group can be used with this methodology to develop a cost of equity estimate for Arizona Water. As previously stated, the Commission authorized a 10.0% return on equity for Southwest Gas in December 2008, based on Mr. Parcell's recommendation.²⁶⁴ In August 2009, Mr. Parcell again recommended a 10% return on equity in UNS Gas' pending rate case.²⁶⁵ Therefore, it is safe to assume that a fair return on equity for a gas utility operating in Arizona is currently 10.0%. It is a simple matter to adjust the 10.0% return on equity for an Arizona gas utility upward to account for the additional risk associated with a water utility, as discussed above. With this adjustment, the indicated cost of equity for an Arizona water utility (unadjusted for other risks) is 11.3%. This does not include an additional upward

²⁶⁴ Decision No. 70665 (Dec. 24, 2008).

²⁶⁵ See Direct Testimony of David C. Parcell, Docket No. G-04204A-08-0571 (June 8, 2009). By contrast, Mr. Parcell's cost of capital testimony was filed in this case only four days later, on June 12, 2009.

1 adjustment for Arizona Water's other risk, however, which is appropriate given that both
2 Southwest Gas and UNS Gas have purchased gas adjustment mechanisms that reduce
3 those utilities' investment risk.

4 **F. The Improper Use of a Geometric Mean to Estimate the Cost of Equity**

5 One of the most critical issues concerning the cost of equity estimates in this case
6 concerns Mr. Parcell's and Mr. Rigsby's improper use of a geometric mean (average) to
7 estimate growth rates in the DCF model and the market risk premium in the CAPM. In
8 his prefiled testimony, Dr. Zepp addressed at length why an arithmetic mean (average)
9 must be used to forecast what may happen in the future, i.e., the investor-expected return
10 on equity.²⁶⁶ Moreover, Staff uses an arithmetic average in determining the historic
11 market risk premium in the CAPM, not a geometric average.²⁶⁷ In short, while geometric
12 averages provide a useful way to compare past performance of assets (which is why they
13 are widely reported), they fail to capture future volatility (i.e., risk) and, as a result,
14 understate the required return on an investment in a risky asset.

15 It is well established that the arithmetic average most accurately approximates the
16 expected future rate of return and is the theoretically correct method for estimating the
17 cost of capital. Attached to Dr. Zepp's rebuttal testimony at tab 3 is an excerpt from Dr.
18 Roger Morin's textbook on regulatory finance, which provides a detailed discussion of
19 this issue.²⁶⁸ Dr. Morin explains (citing numerous authorities) that although "the
20 geometric mean is appropriate when measuring performance over a long time period, it is
21 incorrect when estimating a risk premium to compute the cost of capital."²⁶⁹ The use of

22
23 ²⁶⁶ See Ex. A-42 at 17-20; Ex. A-43 at 8, 11-12.

24 ²⁶⁷ See, e.g., Direct Testimony of Joel M. Reiker, Docket No. W-01445A-02-0619 (filed July 8,
25 2003) at 24 (describing the inputs used by Staff in the Company's Eastern Group rate case);
26 Direct Testimony of Alejandro Ramirez, Docket No. W-01445A-04-0650 (filed April 18, 2005)
at 29 (describing the inputs used by Staff in the Company's Western Group rate case).

²⁶⁸ Morin at 133-43.

²⁶⁹ Id. at 133.

1 an arithmetic mean is theoretically correct because “the arithmetic mean recognizes the
2 uncertainty in the stock market while the geometric mean removes the uncertainty by
3 smoothing over annual differences.”²⁷⁰ Dr. Morin also provides empirical evidence that
4 the arithmetic mean provides the best estimate of expected future returns as well as
5 authorities from the academic community supporting the use of an arithmetic mean to
6 estimate the cost of capital.²⁷¹ Finally, he provides a formal demonstration supporting the
7 use of an arithmetic mean.²⁷²

8 Further, the leading graduate school finance textbook provides a calculation
9 demonstrating why an arithmetic average should be used to estimate the cost of capital,
10 and explains that “[i]f the cost of capital is estimated from historic returns or risk
11 premiums, use arithmetic averages, not compound [i.e., geometric] annual rates of
12 return.”²⁷³ Presumably for this reason, Mr. Rigsby testified in previous Arizona Water
13 rate cases that “the consensus among financial analysts is that the arithmetic mean is the
14 better of the two averages,” and relied on his CAPM estimate that used an arithmetic
15 average as a check on his DCF analysis.²⁷⁴

16 Rather than focusing on what method is conceptually correct, Mr. Parcell and Mr.
17 Rigsby contend that if an investor has information available, such information should be
18 used to determine the Company’s cost of equity even if its use is improper. At the
19 hearing, for example, Mr. Parcell claimed that Value Line uses a geometric average to
20 determine projected growth rates,²⁷⁵ but the instructions do not explain how Value Line’s

21
22 ²⁷⁰ *Id.* at 134.

23 ²⁷¹ *Id.* at 134-38.

24 ²⁷² *Id.* at 140-43.

25 ²⁷³ Richard A. Brealey, Stewart C. Myers and Franklin Allen, *Principles of Corporate Finance*
175-76 (McGraw Hill/Irwin 8th ed. 2006) (copy attached to this brief at tab B). *See also* Ex. A-
42 at 19-20.

26 ²⁷⁴ Ex. A-52 at 28; Ex. A-53 at 26.

²⁷⁵ Tr. at 1373-74.

1 projections of future growth are actually determined, nor would an investor know what
2 type of average is being used.²⁷⁶ Likewise, Mr. Rigsby asserted that Ibbotson, in its
3 annual valuation yearbook, reports both arithmetic and geometric mean returns, and that
4 investors would therefore rely on both.²⁷⁷ But Ibbotson states that “[t]he equity risk
5 premium data presented in this book are arithmetic average risk premia as opposed to
6 geometric average risk premia,” and further explains why future returns should be
7 estimated with arithmetic averages, not geometric averages.²⁷⁸

8 If the test is simply whether investors have information available, and not whether
9 its use is conceptually correct, then the Commission’s prior rejection of methods such as
10 the risk premium method used by the California Public Utilities Commission, proposed by
11 Dr. Zepp in Arizona Water’s previous rate case, was improper.²⁷⁹ In that case, the
12 Commission stated that the risk premium methodology is based on a “comparable
13 earnings” method that “has long been discredited.”²⁸⁰ Even if true, however, an investor
14 may still rely on that method and, under the logic of Mr. Parcell and Mr. Rigsby, the
15 Commission should have considered it.

16 Moreover, there are types of information and methods that the Commission should
17 also consider if it were to accept the arguments of Mr. Parcell and Mr. Rigsby. For
18 example, Value Line reports projected returns on equity for the larger water utilities in the
19

20 ²⁷⁶ For example, the first page of Exhibit A-48 provides Value Line’s historic data and projections
21 for American States Water. There is no explanation for how its estimate of earnings per share of
22 \$2.60 in 2012-2014 was derived. The \$2.60 forecast is 68% greater than the \$1.55 earnings per
23 share reported for 2008, which is an annual growth rate of nearly 11%. It is certainly not
consistent with the historic five-year compound growth rate of 5.5% or the historic ten-year
growth rate of 3.5% that Value Line reports. In short, while Value Line may report past growth
rates on a geometric basis, it does not use those growth rates to estimate future growth.

24 ²⁷⁷ Tr. at 1450, 1456-57 (referring to the *Ibbotson SBBI Valuation Edition Yearbook* (Morningstar
2009) (hereinafter “*Ibbotson*”)); Ex. R-33 at 8.

25 ²⁷⁸ Ex. A-54.

26 ²⁷⁹ See Decision No. 68302 at 37-38.

²⁸⁰ *Id.* at 37.

1 Staff water utility sample group, American States Water, Aqua America and California
2 Water. For the period 2012 through 2014, Value Line currently projects an average return
3 on equity of 11.8%.²⁸¹ Value Line's forecasts are widely available and would be
4 considered by investors in evaluating an investment in those utilities. In fact, Mr. Rigsby
5 specifically selected those three water utilities for his proxy group for Arizona Water
6 because Value Line provides long-term estimates of those utilities' return on common
7 equity.²⁸² Therefore, if the principal criterion for deciding whether to consider a particular
8 equity cost estimate is its availability to investors, the Commission should use Value
9 Line's projected average return of 11.8% to estimate Arizona Water's cost of equity.

10 Similarly, the market-to-book ("M/B") ratios of the sample water utilities are
11 widely available to the investment community, along with the book values of those
12 utilities' stocks.²⁸³ Some authorities believe that it is improper to use a market-based
13 equity return derived by means of the DCF model with an original cost (i.e., net book
14 value) rate base when a utility's stock is trading above book value.²⁸⁴ Instead, when an
15 original cost rate base is used, the book value of the sample water utilities' stocks should
16 be used to calculate the dividend yield to ensure methodological consistency.²⁸⁵ In this
17 case, the average M/B ratio of the sample water utilities is nearly 2.0, i.e., the average
18 market price of those utilities' stocks is two times their book value.²⁸⁶ That means that the
19 dividend yield calculations made by the parties are understated by 50%. Thus, instead of
20 being in 3.0% to 3.8% range for the sample water utility group, the dividend yield should

21 ²⁸¹ Ex. A-48.

22 ²⁸² Ex. R-32 at 20.

23 ²⁸³ See, e.g., Ex. A-48.

24 ²⁸⁴ See, e.g., Win Whittaker, *The Discounted Cash Flow Methodology: Its Use in Estimating a Utility's Cost of Equity*, 12 Energy L.J. 265 (1991).

25 ²⁸⁵ *Id.* at 281-83 (citing *Farmers Union Cent. Exch., Inc. v. FERC*, 734 F.2d 1486 (D.C.Cir. 1984)).

26 ²⁸⁶ See, e.g., Ex. R-32, Sch. WAR-4 at 2. As shown on that schedule, the average M/B ratio of RUCO's sample water utilities is 1.94.

1 be 150 to 190 basis points higher, and the parties' DCF model estimates should likewise
2 be 150 to 190 basis points higher.

3 The bottom line is that investors may well use data from Ibbotson incorrectly, as
4 RUCO contends, or erroneously assume that Value Line's projected earnings and growth
5 rates are based on geometric averages, as Mr. Parcell claims. Investors undoubtedly use
6 (and misuse) a variety of information in deciding whether to invest in securities. But that
7 does not mean the Commission should make the same mistakes in determining the cost of
8 capital for water utilities. For the reasons stated, there is no conceptual basis for using
9 geometric averages to estimate expected returns on equity. Therefore, the cost of equity
10 estimates of Mr. Parcell and Mr. Rigsby should be rejected.

11 G. Mr. Parcell and Mr. Rigsby Have Ignored Current Market Risk in
12 Their CAPM Estimates

13 The CAPM is a type of risk premium methodology that quantifies the additional
14 return required by investors for bearing incremental risk.²⁸⁷ The CAPM formula is:

15
$$k = R_f + \beta(R_m - R_f)$$

16 Where: k is the expected return, R_f is the risk-free rate, R_m is the market
17 return, $(R_m - R_f)$ is the market risk premium, and β is beta.²⁸⁸

18 Boiled down, "the CAPM asserts that an investor expects to earn a return, k , that could be
19 gained on a risk-free investment, R_f , plus a risk premium for assuming risk, proportional
20 to the security's market risk, β , and the market risk premium, $R_m - R_f$."²⁸⁹

21 While all of the parties are in agreement regarding the theory behind the CAPM,
22 the CAPM estimates of Mr. Parcell and Mr. Rigsby are dramatically less than the
23 estimates of Dr. Zepp and the estimate Dr. Zepp obtained using the Staff method

24
25 ²⁸⁷ See Ex. S-22 at 20-21 (discussing CAPM); Ex. R-32 at 28-29 (same); Ex. A-41 at 31 (same).

26 ²⁸⁸ *Id.*

²⁸⁹ *Morin* at 146.

1 (unadjusted for Arizona Water's additional risk). Mr. Parcell's CAPM estimates average
2 8.4% and Mr. Rigsby's estimates average 6.3%, while Dr. Zepp's estimates average
3 12.1% and Staff's estimates using the Commission's previously approved method would
4 average 12.6%.²⁹⁰

5 The CAPM estimates of Mr. Parcell and Mr. Rigsby are extraordinarily low,
6 particularly given the volatility of the market. By comparison, the Commission recently
7 authorized a 10.0% return on equity for Southwest Gas Corporation, based on the
8 recommendation of Mr. Parcell.²⁹¹ The gas utilities sample presented by RUCO has a
9 lower beta than the parties' water utility sample and, as a result, has a lower cost of equity
10 than water utilities under accepted finance theory, as the Commission has recognized.²⁹²
11 Moreover, Mr. Parcell's CAPM estimates are approximately equal to the cost of long-term
12 debt, while Mr. Rigsby's CAPM estimates are substantially below the cost of long-term
13 debt.²⁹³

14 There are several reasons for these remarkably low equity cost estimates. One
15 reason is that, in contrast to Dr. Zepp and Staff, Mr. Parcell and Mr. Rigsby both used a
16 geometric average in calculating the historic market risk premium, which, as previously
17 explained, is conceptually flawed and reduces the result produced by the CAPM by
18 understating historic market volatility, i.e., investment risk.²⁹⁴ As Dr. Morin explains in
19 his textbook on regulatory finance:

20 Every financial model used to calculate the cost of capital
21 recognizes that investors are risk-averse and avoid risk unless
22 they are adequately compensated for undertaking it. It is more

23 ²⁹⁰ Ex. S-22 at 3; Ex. R-32, Sch. WAR-1 at 3; Ex. A-41, Tables 13, 14; Ex. A-42, Sch. TZ-1.

24 ²⁹¹ Decision No. 70665 (Dec. 24, 2008).

25 ²⁹² Decision No. 66849 at 21. *See also* Direct Testimony of Joel M. Reiker, Docket No. W-
01445A-02-0619 (filed July 8, 2003), at 26, Sch. JMR-7, Sch. JMR- 18.

26 ²⁹³ Ex. A-42 at 46.

²⁹⁴ *E.g.*, Ex. A-42 at 18-19.

1 consistent to use the mean [average] that fully impounds risk
2 (arithmetic mean) than the one from which risk has been
3 removed (geometric mean). In short, the arithmetic mean
4 recognizes the uncertainty in the stock market while the
geometric mean removes the uncertainty by smoothing over
annual differences.²⁹⁵

5 Mr. Rigsby also used other incorrect inputs, such as a 5-year Treasury note as the risk-free
6 rate²⁹⁶ and the historic total returns on that security rather than the correct, riskless income
7 (interest) returns.²⁹⁷ But even more critically, neither Mr. Parcell nor Mr. Rigsby made
8 any effort to estimate the current market risk premium. In contrast, in both of Arizona
9 Water's prior rate cases, Staff used an historic market risk premium and a current market
10 risk premium in its CAPM estimates. In this case, Mr. Parcell and Mr. Rigsby have
11 ignored current market risk. This is one-sided and result-driven.

12 Changes in the current market risk premium have been a significant factor in the
13 cost of equity authorized by the Commission for water and wastewater utilities. In the
14 Company's Eastern Group case, filed in 2002, Staff computed a current market risk
15 premium of 13.1% in its CAPM estimate, and relied on that market risk premium in
16 estimating a cost of equity of 9.2%, using the same water utility sample group that Dr.
17 Zepp has used in this case.²⁹⁸ At that time, the country was in the midst of a recession,
18 and, according to Staff, interest rates had fallen to the lowest levels since the 1950s.²⁹⁹

19
20 ²⁹⁵ *Morin* at 134 (excerpt attached to Ex. A-42 at tab 3).

21 ²⁹⁶ Ex. A-42 at 46-48. Dr. Morin explains that "because common stock is a long-term investment
22 and because cash flows to investors last indefinitely, the yield on very long-term government
bonds, namely the yield on 30-year Treasury bonds, is the best measure of the risk-free rate for
use in the CAPM." *Morin* at 151.

23 ²⁹⁷ Ex. A-42 at 48. *See also Ibbotson* at 58 (excerpt attached to Ex. A-42 at tab 4). Although Mr.
24 Parcell used a 20-Treasury as the risk-free rate, he also erroneously used the total return rather
than the income return, which, as discussed below, biases downward the historic market risk
premium. Ex. A-42 at 30-31.

25 ²⁹⁸ Ex. A-44; Direct Testimony of Joel M. Reiker, Docket No. W-01445A-02-0619 at 24, 25 (July
8, 2003).

26 ²⁹⁹ Direct Testimony of Joel M. Reiker, Docket No. W-01445A-02-0619 at 5 (July 8, 2003).

1 Moreover, the average beta of Staff's water utility sample group was only 0.59, indicating
2 that investment risk for the water utility industry was low relative to the market as a
3 whole.³⁰⁰

4 When the Company filed its rate case for its Western Group systems two years
5 later, interest rates had increased from 2003 levels, and the average beta of the Staff's
6 water utility sample group had increased as well, indicating greater investment risk.³⁰¹
7 However, Staff's cost of equity estimate was slightly lower than in the Eastern Group
8 case, 9.1%. The primary reason was that Staff's current market risk premium had
9 dropped from 13.1% to 7.8%.³⁰² The Commission, in adopting Staff's CAPM estimate,
10 relied on this change, explaining that "while interest rates have gone up, the cost of equity
11 for the market as a whole as decreased, while the cost of equity for utilities has remained
12 relatively stable."³⁰³

13 More recently, in Black Mountain Sewer Corporation's rate case, the Commission
14 relied on a further decline in the current market risk premium to support Staff's
15 recommended 9.6% cost of equity.³⁰⁴ In that case, interest rates and the average beta of
16 the sample group were even higher than 2003 levels, and while the result produced by
17 Staff's models was somewhat higher, the increase was not as large as would be
18 expected.³⁰⁵ The reason was that Staff's current market risk premium had decreased to
19 only 5.7%, reducing the result produced by the CAPM. Thus, while interest rates and the

20 ³⁰⁰ Ex. A-44, Sch. JMR-7.

21 ³⁰¹ Ex. A-45, Sch. AXR-8.

22 ³⁰² *Id.*

23 ³⁰³ Decision No. 68302 at 38.

24 ³⁰⁴ *Black Mountain Sewer Corp.*, Decision No. 69164 (Dec. 5, 2006).

25 ³⁰⁵ In the Black Mountain case, the intermediate-term Treasury used by Staff in its CAPM was
26 4.8%, while the average beta of Staff's sample group was 0.74. Surrebuttal Testimony of Pedro
M. Chaves, Docket No. SW-022361A-05-0657, Sch. PMC-2 (May 4, 2006). In Arizona Water's
Eastern Group case, in contrast, the intermediate-term Treasury used by Staff in its CAPM was
3.3%, while the average beta of Staff's sample group was 0.59. Ex. A-44, Sch. JMR-7 (July 8,
2003).

1 investment risk of the water utility sample group had increased, Staff argued that those
2 increases were offset by a further decline in the current market risk.³⁰⁶

3 As these decisions show, not only has the Commission consistently considered
4 current market risk in determining the cost of equity, but changes in the current market
5 risk premium have had a major impact on the authorized return on equity by offsetting
6 increases in interest rates and the water utility sample group's market risk (i.e., its beta).
7 Staff argued in the Black Mountain rate case that "[t]he [market risk premium] moves
8 with the market which can be volatile. Market volatility does not make the CAPM model
9 unstable or subject to manipulation."³⁰⁷ Staff also explained that it "uses both an
10 historical [market risk premium] and a current [market risk premium] to mitigate the
11 market's volatility."³⁰⁸ Here, in contrast, Mr. Parcell and Mr. Rigsby have ignored market
12 volatility altogether by failing to calculate a current market premium and using the
13 geometric mean to reduce the historic market risk premium.

14 Mr. Rigsby has acknowledged the importance of considering current market
15 conditions in determining the cost of equity:

16 Consideration of the economic environment is necessary
17 because trends in interest rates, present and projected levels of
18 inflation, and the overall state of the U.S. economy determine
19 the rate of return that investors earn on their invested funds.
20 Each of these factors represent potential risks that must be
21 weighed when estimating the cost of equity capital for a
regulated utility and are, most often, the same factors
considered by individuals who are also investing in non-
regulated entities.³⁰⁹

22 In light of the current volatility in the financial markets, the failure to consider current

23
24 ³⁰⁶ *Black Mountain Sewer Corp.*, Decision No. 69164 at 25-26 (Dec. 5, 2006).

25 ³⁰⁷ Closing Brief of Commission Staff, *Black Mountain Sewer Corp.*, Docket No. SW-02361A-
05-0657 at 24 (excerpts attached at tab C).

26 ³⁰⁸ *Id.* at 25.

³⁰⁹ Ex. R-32 at 35.

1 market risk grossly distorts the CAPM result and significantly understates Arizona
2 Water's cost of equity.³¹⁰

3 In sum, given the Commission's consistent reliance on current market risk in
4 estimating the cost of equity (including the use of current market risk to justify a lower
5 cost of equity), it would be arbitrary and capricious to now ignore current market risk.³¹¹
6 Consequently, the use of two *historic* market risk premiums (one of which is conceptually
7 wrong for the reasons given previously) without considering the impact of current market
8 risk on investor expectations is inappropriate.

9 H. Mr. Parcell and Mr. Rigsby Improperly Use Total Returns Rather
10 Than Income Returns in the CAPM

11 As noted above, Mr. Parcell and Mr. Rigsby erroneously used the average *total*
12 return on a Treasury security rather than the average *income* return in calculating their
13 historic market risk premium. Once again, this reduces the market risk premium. The
14 reason that an average income return must be used, rather than the average total return, is
15 a matter of common sense.

16 As previously explained, the CAPM is a risk premium methodology that is based
17 on the premise that an investor expects to earn a return equal to the return on a risk-free
18 investment plus a premium for assuming additional risk that is proportional to the
19 security's market risk (i.e., its beta).³¹² U.S. Treasuries are commonly used as a proxy for
20 the risk-free rate because they are backed by the United States government, effectively
21 eliminating default risk.³¹³ The income return is the portion of the total return that results
22 from the bond's periodic cash flow, i.e., the interest payments. The income return
23 provides an unbiased estimate of the risk-free rate of return because an investor can hold

24 ³¹⁰ See Ex. A-42 at 6-7, 27-29.

25 ³¹¹ See *Duquesne Light*, 488 U.S. at 315 (quoted above).

26 ³¹² See, e.g., *Morin* at 145-46.

³¹³ *Id.* at 152-53.

1 the Treasury security to maturity and receive fixed interest payments with no capital loss
2 or capital gain. If the total return on a Treasury security is used instead, additional risk is
3 injected into the CAPM estimate, which is inconsistent with treating the security as a
4 riskless asset. As explained by Ibbotson:

5 Another point to keep in mind when calculating the equity risk
6 premium is that the income return on the appropriate-horizon
7 Treasury security, rather than the total return, is used in the
8 calculation. The total return is comprised of three return
9 components: the income return, the capital appreciation
10 return, and the reinvestment return. The income return is
11 defined as the portion of the total return that results from a
12 periodic cash flow or, in this case, the bond coupon payment.
13 The capital appreciation return results from the price change
14 of a bond over a specific period. Bond prices generally
15 change in reaction to unexpected fluctuations in yields.
16 Reinvestment return is the return on a given month's
17 investment income when reinvested into the same asset class
18 in the subsequent months of the year. The income return is
19 thus used in the estimation of the equity risk premium because
20 it represents the truly riskless portion of the return.³¹⁴

21 As a consequence of the foregoing errors, Mr. Parcell's and Mr. Rigsby's CAPM
22 estimates dramatically understate the cost of equity for Arizona Water. Given the
23 Commission's consistent reliance on Staff's CAPM estimates in prior water and
24 wastewater utility rate cases, including Arizona Water's Eastern Group and Western
25 Group cases, the Commission should adopt the CAPM estimate presented by Dr. Zepp
26 based on Staff's methods and inputs, which indicates that the current cost of equity is
27 12.6%.

³¹⁴ *Ibbotson* at 58 (excerpt attached to Ex. A-42 at tab 4). *See also* Ex. A-42 at 30-31.

1 I. The Commission Has Previously Rejected the Comparable Earnings
2 Approach

3 In Arizona Water's Western Group rate case, Staff sharply criticized Dr. Zepp's
4 risk premium estimates of the cost of equity because he relied on the authorized and
5 realized returns on equity of the sample water utilities.³¹⁵ The Commission agreed with
6 Staff, finding:

7 In estimating its cost of equity, Arizona Water relied on a risk
8 premium analysis methodology used by the [California] PUC
9 staff, which uses comparisons to actual or authorized returns
10 on equity. This sort of "comparable earnings" analysis has
11 long been discredited for several reasons Market-based
12 methods like the DCF model and the CAPM provide more
13 reliable estimates of equity cost, because it is capital markets,
14 not regulatory commissions that determine the cost of equity.
15 Use of the risk premium analysis urged by the Company
16 would circumvent the market forces that regulation attempts,
17 as much as possible, to replicate.³¹⁶

18 As support, the Commission cited the Arizona Court of Appeals decision in *Sun City*
19 *Water Co. v. Ariz. Corp. Comm'n*, 26 Ariz. App. 304, 547 P.2d 1104 (1976), in which, the
20 Commission explained, the court "strongly criticized the use of utilities as the sample
21 group in a comparable earnings analysis."³¹⁷

22 Remarkably, Staff's witness in this case has presented a comparable earnings
23 estimate of the cost of equity that relies on the returns earned on book common equity by
24 the utilities in the water utility sample group to determine the cost of capital.³¹⁸ Staff has
25 made no attempt to explain why this method has now become acceptable. According to

26 ³¹⁵ Staff's Reply Brief, Docket No. W-01445A-04-0650 at 11 (Aug. 22, 2005) (excerpt attached at tab D).

³¹⁶ Decision No. 68302 at 37. See also *Arizona-American Water Co.*, Decision No. 67093 at 29 (June 30, 2004) (rejecting the use of comparable earnings to estimate the cost of equity).

³¹⁷ Decision No. 68302 at 37.

³¹⁸ Ex. S-22 at 24-25.

1 Mr. Parcell, this method is appropriate because the Commission sets rates based on the
2 original cost (i.e., book value) of the Company's rate base, rather than its fair value.³¹⁹ In
3 response, the Company incorporates by reference the arguments made by Staff in the
4 Company's Western Group rate case, attached hereto at tab D. Moreover, Dr. Zepp
5 demonstrated that when this "discredited" comparable earnings method is combined with
6 other data relied on by Mr. Parcell, the indicated equity cost for the Staff water utility
7 sample falls between 12.3% and 12.8%.³²⁰

8 **J. The Company's Cost of Equity Should Be Adjusted Upward to Reflect**
9 **the Company's Additional Risk**

10 In contrast to many jurisdictions, the Arizona Constitution requires that rates be set
11 on the basis of the fair value of the utility's property.³²¹ This requirement prevents the
12 Commission from authorizing increases in rates and charges for utilities outside the
13 context of a general rate case in which the fair value of the utility's property is
14 determined.³²² As the NARUC has recognized, the ability to utilize surcharges and
15 similar streamlined cost recovery mechanisms that avoid the need to prepare and complete
16 general rate cases to recover increases in discrete operating expenses beyond the utility's
17 control is often critical to a utility's ability to earn its authorized rate of return:

18 For water operators, purchased water and electrical pumping

19
20 ³¹⁹ *Id.* at 24. Following this logic, the DCF model's dividend yield should have been computed
using book common equity per share, not market prices, as previously discussed.

21 ³²⁰ Ex. A-42 at 36-37.

22 ³²¹ Ariz. Const. art. 15, § 14. *See also US West Commc'n, Inc. v. Ariz. Corp. Comm'n*, 201 Ariz.
242, 244-46, ¶¶ 13-19, 34 P.3d 351, 354-55 (2001) (summarizing Arizona court decisions
requiring the use of fair value).

23 ³²² *See, e.g., Residential Util. Consumer Office v. Ariz. Corp. Comm'n*, 199 Ariz. 588, 593, ¶¶ 19-
24 22, 20 P.3d 1169, 1174 (App. 2001) (prohibiting approval of a surcharge to recover increased
costs of Central Arizona Project water outside of a general rate case in which fair value is found
and used to set rates). Notably, in that case, the court declined to address the constitutionality of
25 an Arizona law that specifically authorizes water utilities to implement surcharges outside general
rate cases, A.R.S. § 40-370, because the Commission did not rely on that statute in authorizing
26 the surcharge.

1 costs can count for up to one-third or one-half of their annual
2 costs. Therefore, even slight increases may prove to be
3 significant financial strains for some already struggling small
4 utilities. Allowing automatic rate adjustments for
5 uncontrollable costs (as for mandated cost increases) can
6 provide the operators with the opportunity of recovering these
costs and provide them with economic incentives to continue
adequately serving their customers without expending their
efforts on a rate case to consider this single issue.³²³

7 In its prior cases for its Eastern and Western Group systems, Arizona Water was
8 denied authority to continue its long-standing automatic adjustment mechanisms, under
9 which increases in purchased water and purchased power costs were recovered through a
10 surcharge.³²⁴ In this case, the Company is seeking authority to retain the existing
11 purchased power adjustment mechanisms for its Northern Group systems, and to re-
12 establish its purchased power and water adjustment mechanisms for its Eastern and
13 Western Group systems and to implement a purchased fuel adjustment mechanism on a
14 company-wide basis. Both Staff and RUCO oppose the Company's request, however.

15 The lack of adjustment mechanisms and inability to obtain relief outside a general
16 rate case create additional investment risk and require a higher return on equity.³²⁵ The
17 jurisdictions in which the companies in Staff's water utility sample group operate allow
18 these mechanisms to be used.³²⁶ For example, Value Line specifically discusses the
19 California Public Utilities' Commission's recent approval of water revenue adjustment
20 mechanisms and modified cost-balancing accounts, explaining that these "moves ought to
21 streamline the review process of general rate cases and remove many unexpected costs of
22

23
24 ³²³ NARUC Committee on Water, *Small Water Company Regulation: Choices for Commissioners*
50 (NARUC 1998). See also Ex. A-2 at 2-3, Ex. WMG-RB1, Ex. WMG-RB2.

25 ³²⁴ Decision No. 68176 at 31-34.

26 ³²⁵ See Ex. A-41 at 17-19; Ex. A-1 at 32-33; *Morin*, 43-44.

³²⁶ Ex. A-41 at 17.

1 doing business due to outside factors, such as weather, beyond the companies' control."³²⁷
2 Notably, three of the six water utilities in the Staff water utility sample group operate
3 either entirely or primarily in California.

4 The risk resulting from the fair value requirement and the Commission's failure to
5 authorize adjustment mechanisms is compounded by the Commission's use of an historic
6 test period and the amount of regulatory lag inherent in Arizona's rate-making process,
7 which makes it difficult for utilities to actually earn their authorized rate of return.³²⁸ This
8 rate case, for example, was filed in August 2008, based on a 2007 test year. It has been
9 delayed an additional two months, and new rates will likely become effective in early
10 2010 – some 18 months after the Company's application was filed. The plant constructed
11 and placed in service after December 31, 2007, will not be included in rate base, nor will
12 current expense levels be used. Yet the rates approved in this proceeding will likely be in
13 effect through 2012. Arizona Water has little chance of actually earning its authorized
14 rate of return under these circumstances, particularly if its requested adjustment
15 mechanisms are not approved.

16 Finally, the imposition of inverted block rates creates additional risk.³²⁹ The
17 primary purpose of inverted block rates is to encourage water conservation by a utility's
18 customers. While conserving water is certainly an important goal, this rate design
19 adversely impacts the utility's ability to recover all of its required revenue and earn its
20 authorized rate of return, thereby creating additional investment risk due to revenue
21 erosion and instability. As explained by the American Water Works Association:

22 Increasing block rate structures tend to result in more revenue
23 volatility than other rate structures (i.e., decreasing uniform

24 ³²⁷ Ex. A-48 at (unnumbered) 3 (discussing California Water Service). *See also id.* at
25 (unnumbered) 1 (discussing American States Water).

26 ³²⁸ Ex. A-1 at 27, 31-32.

³²⁹ Ex. A-41 at 20-21.

1 block rates). This revenue volatility is because an increasing
2 block rate anticipates recovering a proportionately greater
3 percentage of the customer class's revenue requirement at
4 higher levels of consumption. These higher levels of
5 consumption tend to be more subject to variations in seasonal
6 weather and, when coupled with a higher unit pricing,
7 customers tend to curtail consumption in these higher
8 consumption blocks.³³⁰

9 Since the goal of inverted block rates is to reduce consumption, changes in revenue
10 should be expected. Indeed, if that were not the case, there would be no point in adopting
11 them. Mr. Reiker's analyses of the impact of inverted-block rates on customer water use,
12 in which he accounted for the effects of temperature and precipitation, demonstrate that
13 the inverted-block rates imposed in the Company's Western Group rate case resulted in a
14 decline in average monthly water use.³³¹ That testimony is undisputed. Moreover,
15 regardless of the reason for the decline, customer water use reductions take place at the
16 higher rates of the inverted-block rate structure, causing a greater impact on revenues. For
17 this reason, the California Public Utilities Commission has authorized several large
18 California water utilities, including American States Water's primary subsidiary and
19 California Water Service, to implement water revenue adjustment mechanisms.³³² If those
20 utilities are regarded as comparable to Arizona Water, then either a similar mechanism
21 should be approved for Arizona Water or an adjustment to account for Arizona Water's
22 additional risk must be made.

23 In short, the Company must be authorized a rate of return that (1) allows the
24 Company to attract capital on reasonable terms; (2) maintains the Company's financial
25 integrity; and (3) permits the Company to realize a return that is commensurate with the
26

³³⁰ American Water Works Association, *Principles of Water Rates, Fees, and Charges* 100 (5th ed. 2000) (hereinafter "*AWWA Manual MI*").

³³¹ Ex. A-18 at 18-19, Exhibit JMR-4; Ex. A-20 at 34, Sch. JMR-RB4- JMR-RB7.

³³² Ex. A-48 at (unnumbered) 1 (discussing American States Water), (unnumbered) 3 (discussing California Water Service).

1 returns earned by enterprises with comparable risks. Furthermore, the Company's rates
2 must be sufficient to produce that return at the time water utility service is being provided,
3 i.e., on a forward-looking basis. In setting the rate of return, the Commission must take
4 into account the risks associated with the particular rate-setting methodologies used in
5 Arizona and their impact on the Company's ability to actually earn a reasonable return, as
6 the Supreme Court stated in *Duquesne Light*. The failure to do so would result in rates
7 that are unjust and unreasonable.

8 **V. RATE DESIGN AND CONSOLIDATION**

9 **A. Consolidation of Company Systems for Ratemaking Purposes**

10 **1. The Company's Rate Consolidation Proposal**

11 The Company currently has a total of 22 public water systems that, for ratemaking
12 purposes, are grouped into 17 systems, i.e., each system has its own rate schedule with
13 individual monthly service charges and commodity rates.³³³ Most of these systems are
14 relatively small, having less than 5,000 customers and revenues below \$3 million.³³⁴ In
15 fact, two systems would be classified on a stand-alone basis as Class D water utilities,
16 while three systems would be classified as Class C water utilities.³³⁵ The Stanfield
17 system, for instance, which is located several miles west of the Company's Casa Grande
18 system, has about 220 customers, \$130,000 in revenues, and is served by two wells.³³⁶

19 The Company requests permission to consolidate several systems for regulatory,
20 accounting, and ratemaking purposes in this case as an initial step toward full
21 consolidation. In a future case, the Company will eventually seek full consolidation of all
22 of its water systems under a single, state-wide tariff. Under the Company's proposal, the
23 following systems would be fully consolidated (i.e., have the same rates): Superstition

24 ³³³ See, e.g., Ex. S-12 at 7-8, Attachments 1-4.

25 ³³⁴ Ex. A-1 at 28.

26 ³³⁵ *Id.*

³³⁶ Ex. S-12 at 8, Attachment 4; Ex. A-1 at 28.

1 and Miami; Lakeside and Overgaard; Pinewood and Rimrock; and Casa Grande and
2 Coolidge. In addition, the following systems would be partially consolidated (i.e., have
3 the same monthly service charge but different commodity rates): Bisbee and Sierra Vista;
4 Sedona and Pinewood/Rimrock; Stanfield and Casa Grande/Coolidge. The systems that
5 are partially consolidated would be fully consolidated (i.e., their commodity rates would
6 be the same) in the next rate case. However, the accounting books and records would be
7 consolidated immediately, as was the case with the two-step consolidation of the Apache
8 Junction and Superior systems.³³⁷

9 The rationale for the Company's step-by-step rate consolidation proposal is set
10 forth in Mr. Harris' direct testimony.³³⁸ In short, consolidation will benefit customers, the
11 water systems and the Company by:

- 12 • Mitigating rate impacts to utility customers by smoothing the effect of cost
13 spikes (e.g., large capital projects) on the cost of providing service.
- 14 • Improving the affordability of service by spreading costs over a larger
15 customer base.
- 16 • Promoting value of service equity by ensuring that all customers pay the
17 same price for comparable utility service.
- 18 • Simplifying administrative and regulatory processes and proceedings,
19 thereby reducing costs, especially costs related to ratemaking.³³⁹

20 All of the systems that would be consolidated under the Company's proposal are
21 located in geographic proximity to each other. These systems currently share common
22 sources of supply, management and operations employees, and other Company
23 resources.³⁴⁰ For example, the Coolidge and Casa Grande systems were physically
24 interconnected in 2007, and therefore already share water production and storage

25 ³³⁷ Ex. A-5 at 12-13; Ex. A-8 at 4. As explained by Mr. Harris, the Commission approved this
26 approach in Decision No. 66849 (March 19, 2004) in connection with authorized the phased
consolidation of the Company's Apache Junction and Superior systems.

³³⁸ Ex. A-5 at 12-16.

³³⁹ *Id.* at 13.

³⁴⁰ *Id.* at 14-16.

1 facilities.³⁴¹ Further, the Company is developing plans for a surface water treatment
2 facility in accordance with its Pinal Valley Master Plan, which will enable the Company
3 to put Central Arizona Project Water to beneficial use for potable uses throughout this
4 area, benefiting all of the Company's Casa Grande, Coolidge and Stanfield customers.³⁴²

5 Other systems proposed for consolidation are physically separated, but are in the
6 same geographic area and share employees and resources, such as the Sedona, Pinewood
7 and Rimrock systems.³⁴³ The consolidation of these systems would allow the Company to
8 fully integrate accounting and recordkeeping, achieve greater efficiencies and, particularly
9 for ratemaking purposes, benefit customers by creating a broader customer base and
10 achieving other economies of scale.

11 To support its rate consolidation proposal and assist the parties in designing cost-
12 based rates, the Company prepared a cost of service study using the commodity-demand
13 method to allocate plant and cost among customer classes.³⁴⁴ Mr. Olea, the Commission's
14 Director of Utilities, reviewed the Company's cost of service study and testified that the
15 cost of service study was reasonable and appropriate and recommended only certain
16 "tweaks" to it.³⁴⁵ In its rebuttal filing, the Company accepted the minor changes
17 recommended by Mr. Olea, and also prepared a second cost of service study based on
18 Staff's recommended rate base, revenues and expenses.³⁴⁶ Staff filed no surrebuttal
19 testimony addressing the Company's cost of service studies, and at hearing Mr. Olea
20 testified that Staff accepted the Company's revised cost of service study.³⁴⁷ RUCO also

21
22 ³⁴¹ *Id.* at 14; Ex. A-9 at 20; Ex. S-12 at 8.

23 ³⁴² Ex. A-9 at 20-22, Ex. FKS-1 (Pinal Valley Water System Master Plan).

24 ³⁴³ Ex. A-5 at 15.

25 ³⁴⁴ Ex. A-18 at 32-34; Ex. A-19, Sch. G-1 through G-7.

26 ³⁴⁵ Ex. S-10 at 5-9; Tr. at 1068-69.

³⁴⁶ Ex. A-21 at 4-5, Ex. JMR-RBEX2 (Sch. RB-G1 through RBG7), Ex. JMR-Staff 1 (Sch. G-1 through G-7).

³⁴⁷ Tr. at 1070-71, 1076-78.

1 accepted the Company's cost of service study, and followed the study in developing its
2 proposed rate design.³⁴⁸ Consequently, there is no disagreement concerning the
3 methodology and inputs used by the Company in its revised cost of service study and in
4 the cost of service study that utilized Staff's recommended rate base, revenues and
5 expenses.

6 In developing its rate consolidation proposal, the Company utilized the cost of
7 service study to evaluate and minimize inter-system subsidies. As Mr. Reiker explained,
8 under the Company's proposed rate design, the residential customers will pay rates that
9 are equal to or less than the cost of service – even in those systems that will be
10 consolidated.³⁴⁹ Consequently, residential customers in one water system will not
11 subsidize residential customers in another water system even if the two systems are
12 consolidated because their rates will remain at or below the cost of service for their class.
13 Ms. Jerich, RUCO's Director, testified at hearing that if rates are set at a level that is equal
14 to or less than the cost of service for the residential class, such rates would be fair to
15 residential class. Therefore, there should be no dispute that the Company's rate
16 consolidation proposal is a fair and reasonable step toward group and system-wide
17 consolidation.

18 2. Staff's Consolidation Proposal

19 Staff agrees that rate consolidation is consistent with the public interest and can
20 provide significant benefits to water utilities, their customers and regulators. Staff
21 believes that when water systems are physically interconnected and, therefore, are sharing
22 common sources of supply and plant, such systems should be consolidated for ratemaking
23 purposes.³⁵⁰ Furthermore, Staff believes that when it is not technically or financially

24
25 ³⁴⁸ Tr. at 850-52.

26 ³⁴⁹ Ex. A-21 at 5; Ex. A-18 at 33-34.

³⁵⁰ Ex. S-12 at 3; Tr. at 1130, 1145.

1 feasible to physically interconnect water systems, rate consolidation would still be
2 appropriate based on several criteria, including proximity and location, public health and
3 safety, communities of interest, economies of scale, rate impact, rate case expense and
4 public policy considerations.³⁵¹

5 In this case, Staff agrees with the Company that system consolidation is
6 appropriate and in the public interest, and recommends approval of the Company's
7 consolidation proposal with certain minor changes.³⁵² First, Staff recommends full
8 consolidation of Sedona, Pinewood and Rimrock, while the Company proposes partial
9 consolidation of those systems, with all three systems having the same monthly minimum
10 charge but with Sedona having its own commodity rates.³⁵³ Second, Staff agrees that
11 Casa Grande and Coolidge should be fully consolidated and that Stanfield be partially
12 consolidated with those systems. However, Staff believes that all three systems should
13 have the same commodity rate for residential usage in the initial or "lifeline" block, while
14 the Company believes that Stanfield's commodity rates should be developed
15 independently of Casa Grande and Coolidge in this case.³⁵⁴

16 Staff also recommends that the Company be required to file a detailed timeline
17 indicating when the Company will be able to interconnect those systems where
18 interconnection is technically and financially feasible and a plan/timeline by which the
19 Company will achieve a single rate structure for all of its systems.³⁵⁵ Staff further
20 recommends that this filing be made 120 days from the decision in this case.³⁵⁶

21 Given that Staff's rate consolidation proposal is very similar to the Company's
22

23 ³⁵¹ Ex. S-12 at 3, 5-7; Tr. at 1132-33, 1145-46.

24 ³⁵² Ex. S-12 at 3; Tr. at 1128.

25 ³⁵³ Ex. S-26 at 4; Tr. at 1155-56.

26 ³⁵⁴ *Id.*

³⁵⁵ Ex. S-12 at 3-4; Tr. at 1134-37.

³⁵⁶ Tr. at 1137.

1 proposal, the Company generally supports Staff's recommendation. However, the
2 Company disagrees with Staff's modifications from a rate design perspective. Under
3 Arizona Water's proposed phased/partial consolidation of Sedona, Pinewood and
4 Rimrock, residential customers on 5/8 x 3/4-inch meters in Pinewood would experience
5 rate increases in the 5% to 10% range, while customers on 5/8 x 3/4-inch meters in
6 Rimrock would experience slight decreases, ranging from 3% to 6%.³⁵⁷ Under Staff's
7 proposed full consolidation, however, residential customers on 5/8 x 3/4-inch meters in
8 Rimrock and Pinewood would experience significant rate decreases ranging from 18% to
9 35%, undermining the water conservation price signal sent by the inverted block rates
10 being proposed by the parties.³⁵⁸ This is especially problematic for Pinewood, where
11 water supplies are less certain and high water use should be discouraged to avoid future
12 supply issues.³⁵⁹ Staff did not address the Company's concerns, and instead asserted that
13 it "has taken a rapid consolidation stance."³⁶⁰

14 Staff's recommendation to partially consolidate Stanfield is also troubling. While
15 Stanfield's second and third block commodity rates would be set independently of the
16 commodity rates for Casa Grande and Coolidge, Stanfield's initial, "lifeline" commodity
17 rate for residential customers on 5/8 x 3/4-inch meters would be identical to that of the
18 other systems.³⁶¹ Under the Company's proposal, in contrast, the lifeline rate for Stanfield
19 would be developed independently, like the rates for the second and third blocks. As a
20 result, 5/8 x 3/4-inch residential customers would experience virtually no change in their
21 monthly bills under the Company's proposal, but would receive a rate decrease ranging
22

23 ³⁵⁷ Ex. A-21 at 12.

24 ³⁵⁸ *Id.*

25 ³⁵⁹ *Id.*; Tr. at 635.

26 ³⁶⁰ See Ex. S-27 at 5.

³⁶¹ Ex. S-26 at 4.

1 from 18% to 20% under Staff's proposal.³⁶² Staff provided no justification for this rate
2 decrease, and again failed to respond to the Company's testimony raising this issue.³⁶³

3 The Company shares Staff's goal of moving quickly toward full consolidation of
4 the Company's water systems. But that does not mean incorrect and contradictory price
5 signals should be given to customers, particularly when such signals can be avoided by
6 proceeding in two steps, as the Company did in consolidating its Apache Junction and
7 Superior systems and as the Company has proposed in this case for those systems with
8 significant differences in their current commodity rates.³⁶⁴

9 3. RUCO's Multi-Tariff Pricing Proposal Should Be Rejected

10 In contrast to the Company and Staff, RUCO contends that none of the Company's
11 systems should be consolidated because RUCO argues that rate consolidation violates
12 "traditional cost of service ratemaking" under which "those who use the utility services
13 pay for them."³⁶⁵ As an alternative to the rate consolidation proposals of the Company
14 and Staff, RUCO recommended that each of the Company's systems have the same
15 monthly minimum charge but different, system-specific commodity rates.³⁶⁶ This means
16 that each time the Company wishes to modify the rates for one of its systems or a group of
17 systems, the Company must file the schedules and related information required under
18 A.A.C. R14-2-103 for *each* of its 17 systems.³⁶⁷ It also means that the Company must
19 maintain separate books and records of account for each of its 17 systems for ratemaking
20 and other regulatory purposes, eliminating the administrative and regulatory benefits of
21 consolidation.³⁶⁸ At the same time, inter-system subsidies would be created by RUCO's

22 ³⁶² Ex. A-21 at 12.

23 ³⁶³ Ex. S-27 at 8.

24 ³⁶⁴ Ex. A-21 at 12.

25 ³⁶⁵ Ex. R-35 at 4; Tr. at 1549.

26 ³⁶⁶ *Id.* at 12-13

³⁶⁷ Ex. A-8 at 4-5; Tr. at 863-64; 1538, 1543-44.

³⁶⁸ Ex. A-8 at 4-5; Tr. at 1479.

1 proposal to limit rate increases for the average residential customer to \$5.00 per month,
2 which is achieved by shifting cost recovery to other systems in violation of cost of service
3 principles.³⁶⁹

4 The Company fully supports the use of cost of service principles. That is why the
5 Company prepared a cost of service study to support its rate consolidation proposal and its
6 rate design.³⁷⁰ Notably, RUCO did not prepare its own cost of service study, and accepted
7 the Company's study, as Mr. Moore testified.³⁷¹ As explained previously, the Company's
8 cost of service study demonstrates that residential customers in one system will not
9 subsidize residential customers in another system under the Company's consolidation
10 proposal because their rates will remain at or below the cost of service.³⁷² Therefore,
11 there is no basis for RUCO's argument that consolidation violates cost of service
12 principles if the Company's proposal were adopted.

13 RUCO also cites to the testimony of a beer-manufacturer's witness in a New
14 Hampshire rate case to support its argument that consolidation makes it more difficult to
15 inspect and audit the plant and expenses for each system.³⁷³ This argument is a red
16 herring. For many years, the Company has operated noncontiguous water systems that
17 have been consolidated for ratemaking purposes. The Sedona system, for example,
18 includes both Sedona and Valley Vista (Village of Oak Creek).³⁷⁴ Likewise, the
19 Overgaard system consists of Overgaard and Forest Towne, while the Lakeside system

21
22 ³⁶⁹ Tr. at 865-866. The revenue shortfall produced by RUCO's \$5.00 bill increase cap was based
23 on RUCO's proposed revenue requirement, as were all of the "options" evaluated by RUCO. Tr.
at 1477. A higher revenue requirement would require a larger reallocation of costs among
systems, an increase in the bill increase cap or both. Tr. at 1570-71.

24 ³⁷⁰ Ex. A-21 at 5; Ex. A-18 at 33-34.

25 ³⁷¹ Tr. at 850-52.

26 ³⁷² Ex. A-21 at 5; Ex. A-18 at 33-34.

³⁷³ Ex. R- 36 at 20; Ex. R-35 at 21.

³⁷⁴ Ex. S-12 at 8, Attachment 2, Map II-b.

1 consists of Lakeside and Pinetop Lakes.³⁷⁵ And the Casa Grande system includes Tierra
2 Grande, which currently is not physically interconnected with Casa Grande.³⁷⁶ There is
3 no evidence that the consolidation of any of these systems has inhibited the ability of Staff
4 or RUCO to inspect and audit utility plant or caused any other problems in connection
5 with setting rates in this case or in the Company's prior rate cases.³⁷⁷

6 In addition, RUCO argues that rate consolidation may lead to distorted price
7 signals and discourage water conservation.³⁷⁸ There is simply no evidence that the
8 Company's consolidation proposal undermines the price signals given by its inverted
9 block rate design. In fact, as the Company's witnesses have explained, the Company is
10 proceeding in smaller steps, with certain systems being partially consolidated at this time,
11 to avoid sending an improper price signal to customers that would conflict with the need
12 to encourage water conservation.³⁷⁹ RUCO has not explained how the Company's
13 consolidation proposal would undermine the effectiveness of the Company's inverted
14 block rate design nor has RUCO offered any evidence suggesting that the Company's
15 proposal would discourage conservation.

16 Put bluntly, RUCO's proposal appears intended to prevent consolidation from
17 actually taking place, as evidenced by RUCO's opposition to consolidating Casa Grande
18 and Coolidge, even though those systems have contiguous service territories and have
19 shared water production and storage facilities since 2007. According to Staff, water
20 systems that are interconnected should be consolidated for ratemaking purposes.³⁸⁰ But
21 RUCO opposes consolidation of those systems. RUCO also opposes consolidation of
22

23 ³⁷⁵ *Id.* at Map II-a.

24 ³⁷⁶ *Id.* at 8, Attachment 4, Map IV.

25 ³⁷⁷ Ex. A-8 at 5-6; Tr. at 284-85, 1123-24, 1174-75.

26 ³⁷⁸ Ex. R-36 at 11; Tr. at 1503.

³⁷⁹ Ex. A-21 at 12; Ex. A-8 at 4-5.

³⁸⁰ Ex. S-12 at 3; Tr. at 1129-30.

1 comparably sized systems such as Lakeside and Overgaard (which currently have very
2 similar rates) and Sierra Vista and Bisbee, which do not present the subsidization problem
3 alleged by RUCO when a small system is consolidated with a larger system.³⁸¹

4 Moreover, RUCO's contention that the Company's proposal always results in
5 "inequitable unilateral subsidization of smaller systems by larger systems"³⁸² is
6 unsupported by the evidence or any analysis of the Company's particular systems,
7 including, for example, their plant per customer.³⁸³ In any case, one of the primary
8 reasons for consolidation is to create a larger customer base over which costs can be
9 spread, as all of the witnesses have acknowledged. Under the Company's proposal,
10 Stanfield, for example, which has about 220 customers, would be consolidated with Casa
11 Grande and Coolidge, which together have about 27,500 customers. Under the
12 Company's test year revenue requirement, about \$166,000 of Stanfield's stand-alone
13 revenue requirement would be absorbed by Casa Grande and Coolidge customers. This
14 amounts to an additional 50 cents per month. By contrast, under RUCO's option F, and at
15 RUCO's lower revenue requirement, Casa Grande and Coolidge customers would pay an
16 additional 41 cents per month so that residential customers in Winkelman, Miami,
17 Stanfield and Rimrock do not experience increases in their monthly bill greater than
18 \$5.00. In both cases, costs are being shifted from smaller systems to larger systems, but
19 under RUCO's Option F, customers in smaller, higher-cost systems such as San Manuel,
20 Oracle, White Tank, and Ajo will pay higher rates to subsidize customers in lower-cost
21 systems.³⁸⁴

22
23 ³⁸¹ See Tr. at 1528-31. See also Ex. A-1 at 28; Ex. A-15.

24 ³⁸² Ex. R-36 at 16.

25 ³⁸³ See, e.g., Tr. at 1507-10.

26 ³⁸⁴ Ex. R-19, Sch. TJC-1. The specific amounts that will be paid by San Manuel, Oracle, White Tank, and Ajo customers to subsidize residential customers in Winkelman, Miami, Stanfield and Rimrock are shown on line 12 of the schedules for the former systems.

1 In reality, RUCO's proposal is a rate design proposal, not a consolidation
2 proposal.³⁸⁵ As the Judge recognized, no advantages flow from RUCO's proposal, and it
3 would prevent any meaningful consolidation from taking place in this case.³⁸⁶ RUCO's
4 proposal should be rejected by the Commission.

5 **B. Rate Design Issues**

6 **1. Summary of Arizona Water's Rate Design Recommendation**

7 Consistent with recent Commission decisions, the Company is proposing an
8 inverted block rate design for all of its systems to encourage water conservation. The
9 residential commodity rate for 5/8 x 3/4-inch meters, which comprise nearly 90% of the
10 Company's customers,³⁸⁷ would have three inverted commodity rate blocks with break-
11 over points at 3,000 and 10,000 gallons per month.³⁸⁸ The rate for the first usage block (0
12 to 3,000 gallons per month) is set at a discount of approximately 25% from the second
13 usage block rate, while the rate for usage in the third or upper usage block (over 10,000
14 gallons per month) is set at a premium of approximately 25% over the second usage block
15 rate.³⁸⁹

16 The purpose of the initial, discounted rate block (often called a "lifeline" rate) is to
17 provide water for nondiscretionary uses at a reduced cost to ensure affordability of
18 service.³⁹⁰ Residential customers served by larger meters and commercial customers also
19 would have inverted block commodity rates, with two rate blocks. The break-over points
20 between the two blocks were scaled upward from 10,000 gallons for residential customers
21

22 ³⁸⁵ Tr. at 1547.

23 ³⁸⁶ *Id.*

24 ³⁸⁷ See Ex. A-21, Ex. JMR-RBEX2 (Sch. RB H-2). During the 2007 test year, the Company
served an average of 74,444 residential customers with 5/8 x 3/4-inch meters out of a total
average number of customers of 82,991.

25 ³⁸⁸ See Ex. A-18 at 35-36 (describing the Company's proposed rate design).

26 ³⁸⁹ Ex. A-18 at 36.

³⁹⁰ Ex. A-18 at 35-36.

1 on 1-inch meters and commercial customers on 5/8 x 3/4-inch meters.³⁹¹ Finally,
2 industrial customers would have a single commodity rate based on the fact that the
3 industrial customer class has already significantly reduced its water use, and no additional
4 price signal is needed for that customer class.³⁹²

5 In sum, the Company's proposed rate design is consistent with established
6 Commission policies. Generally, the allocation of revenue recovery is based on a cost of
7 service study that has been accepted by Staff and RUCO.³⁹³ The Company's rate design
8 addresses affordability of service by providing a discounted, "lifeline" rate for the first
9 3,000 gallons of water used residential customers with 5/8 x 3/4-inch water meters.³⁹⁴ It
10 also avoids inter-system subsidies in connection with rate consolidation by setting rates
11 for each system's residential customer class at or below that class' cost of service.³⁹⁵
12 Finally, it avoids unnecessarily steep increases for the industrial customer class, which has
13 already achieved significant reductions in water usage.³⁹⁶ At the same time, the
14 Company's inverted block rate design provides a strong price signal, encouraging water
15 conservation.

16 RUCO has accepted the Company's rate design, including the Company's
17 recommended single commodity rate for industrial customers.³⁹⁷ Staff also accepted the
18 Company's cost of service study, with certain minor changes recommended by Mr. Olea
19 (which the Company has accepted).³⁹⁸ However, Staff continues to disagree with the

20 ³⁹¹ *Id.* at 36.

21 ³⁹² *Id.* at 35. *See also* Ex. A-20 at 48; Ex. A-21 at 10-11; Ex. A-23 at 8-10 (discussing the rate
design for the industrial customer class).

22 ³⁹³ Ex. A-21 at 4-5, Ex. JMR-RBEX2 (Sch. RB-G1 through RBG7), Ex. JMR-Staff 1 (Sch. G-1
through G-7); Tr. at 849-542, 1070-71, 1076-78.

23 ³⁹⁴ Ex. A-21 at 5.

24 ³⁹⁵ *Id.*

25 ³⁹⁶ *Id.* *See also* Tr. at 573-77 (discussing the company's rate design for the commercial and
industrial classes).

26 ³⁹⁷ Tr. at 849-54, 860-61.

³⁹⁸ Tr. at 1070-71, 1076-78.

1 Company's rate design. These areas of disagreement are discussed in the following
2 section.

3 **2. Staff's Proposed Rate Design Is Flawed and Should Be Rejected**

4 **a. Staff's Proposed Industrial Class Rate Increase**

5 The Staff's proposed rate design would greatly exacerbate the disparity between
6 the rate of return produced by the industrial class and the lower rates of return produced
7 by the other customer classes. Under Staff's proposed rates, and at Staff's proposed
8 revenue requirement with its proposed system consolidations, the industrial customer
9 class would be paying rates that produce, on average, a rate of return of approximately
10 54%, the commercial customer class (twice what the Company proposes) would be paying
11 rates that produce, on average, a rate of return of approximately 18%, and the residential
12 customer class would be paying rates that produce, on average, a rate of return of only
13 6%.³⁹⁹ This difference is significant, particularly given that during the test year, the
14 Company had 77,690 residential customers and only 54 industrial customers.⁴⁰⁰
15 Moreover, with respect to the Casa Grande system, which serves the Company's two
16 largest industrial customers, the rates proposed by Staff for the industrial class would
17 produce a rate of return of 90% (more than triple what the Company proposes), while the
18 rates proposed by Staff for that system's residential class would produce a rate of return of
19 only 4.7%.⁴⁰¹

20 Staff has provided no reason to deviate so starkly from cost of service principles
21 and create such a greatly exacerbated disparity between customer classes, while
22 undermining the Company's earnings.⁴⁰² As intervenor Abbott's rate design expert, Mr.
23 Neidlinger, explained, Staff's rate design produces an excessive subsidy that conflicts

24 ³⁹⁹ *Id.* at Ex. JMR-Staff 1, Sch. G-2 at 1.

25 ⁴⁰⁰ *Id.* at Ex. JMR-RBEX2, Sch. RB-H2 at 1.

26 ⁴⁰¹ *Id.* at Ex. JMR-Staff 1, Sch. G-2 at 13.

⁴⁰² Ex. A-22 at 5-8.

1 with cost of service principles and will make it difficult for the Company to actually earn
2 its authorized rate of return.⁴⁰³ There is no reason to shift additional revenue burdens to
3 the industrial customer class, particularly in view of undisputed evidence showing that
4 industrial customers such as intervenor Abbott and Frito Lay have already reduced their
5 water usage and intend to implement further reductions in the future.⁴⁰⁴ As those
6 customers continue to reduce their water usage, industrial class sales will fall, and
7 irrespective of the higher rates Staff would impose, the Company will have no opportunity
8 to earn its authorized rate of return.⁴⁰⁵

9 **b. Staff's Inverted Block Rate Design for the Industrial Class**
10 **Is Not Necessary**

11 For many of the same reasons, it is unnecessary to impose an inverted block rate
12 design on the industrial class. Basic economic principles tell us that industrial customers
13 are already being strongly encouraged to consume less.⁴⁰⁶ Moreover, "[a] uniform rate
14 also sends customers a usage-based price signal. Because the unit price is constant,
15 industrial customer bills will increase with increased water usage."⁴⁰⁷ Industrial
16 customers therefore already receive a usage-based price signal under a single flat
17 commodity rate because their bills increase if their water usage increases, thereby
18 encouraging conservation.⁴⁰⁸

19 Finally, the Company's two largest industrial customers have already reduced their
20 water use and intend to further reduce their water use in the future, regardless of whether
21 inverted block rates are imposed on them, indicating that an additional incentive is
22

23 ⁴⁰³ Tr. at 678-83.

24 ⁴⁰⁴ Ex. A-20 at 46-47; Ex. A-21 at 7-9; Ex. A-3 at 5.

25 ⁴⁰⁵ Ex. A-3 at 6-7; Ex. A-21 at 8-9.

26 ⁴⁰⁶ Tr. at 574-75; Ex. A-23 at 9-10

⁴⁰⁷ *AWWA Manual M1* 85.

⁴⁰⁸ Ex. A-23 at 8.

1 unnecessary.⁴⁰⁹ Mr. Chasse, for example, testified that Abbott's corporate office has
2 established aggressive water reduction goals across the country, and that Staff's proposed
3 rate design would not change those goals.⁴¹⁰ There is simply no good reason to impose
4 inverted block rates on the industrial customer class.

5 **c. Staff's Proposed Increase In the Revenue Collected**
6 **Through the Commodity Rates and Its Spread Between**
7 **the Commodity Rate Blocks Are Excessive**

8 Staff proposes to increase the percentage of revenues collected by means of the
9 commodity rates by over 3%.⁴¹¹ While that percentage may seem small, it amounts to a
10 shift of about \$1.6 million of revenues into the commodity rates, based on Staff's final
11 recommended level of revenues of about \$53.2 million. At the same time, Staff is
12 proposing to dramatically increase the differences between the commodity rates
13 applicable to the different usage blocks. These rate design changes, which are not
14 supported by any evidence, will make the Company's ability to recover the full cost of
15 providing water service even more unlikely by allocating an even greater percentage of
16 the revenue requirement to the upper discretionary use rate block.⁴¹² The purpose of such
17 a rate design is to cause further reductions in water use and the Company's customers'
18 water use has been declining.⁴¹³ The considerable revenue Staff projects from the highest
19 rate block will not be likely to materialize, thereby denying the Company the opportunity
20 to fully recover the cost of service or achieve the authorized rate of return.

21 In the Company's prior rate case for its six Western Group systems, the
22 Commission adopted Staff's inverted block rate design with three rate blocks, including

23 ⁴⁰⁹ Ex. A-3 at 6-7.

24 ⁴¹⁰ Tr. at 596-98. See also Ex. A-3, Ex. WMG-RB5, WMG-RB6 (information on Abbot and Frito
25 Lay goals to reduce water use).

26 ⁴¹¹ Ex. A-21 at 13.

⁴¹² *Id.* at 14. See also *AWWA Manual M1* at 100 (explaining that inverted block rates increase
revenue volatility and may cause adverse revenue effects).

⁴¹³ Ex. A-3 at 4-6; Ex. A-20 at 8, 33; A-21 at 8-9.

1 an initial discounted rate for usage between 0 and 3,000 gallons.⁴¹⁴ The Commission
2 found that the risk of revenue instability resulting from Staff's rate design would be offset
3 by customer growth⁴¹⁵ – a circumstance that does not now exist and will not in the
4 foreseeable future, given the lack of homebuilding in the Company's service areas.
5 Notably, under the rate design approved in the Western Group case, the difference
6 between the initial discounted rate and the second usage block rate ranged from 18% to
7 33%, with an average difference of 22%.⁴¹⁶ More importantly, the difference between the
8 second usage block rate and the third or upper usage block rate ranged from 11% to 25%,
9 with an average difference of 13.5%.⁴¹⁷

10 In this case, Staff has proposed a similar rate design for the Company's five
11 Northern Group systems, but with much more dramatic differences between the
12 commodity rates. For Lakeside and Overgaard (consolidated), the difference between the
13 initial discounted rate and the second usage block rate is 43%, while for Sedona,
14 Pinewood and Rimrock (consolidated), the difference is 46%.⁴¹⁸ Similarly, for Lakeside
15 and Overgaard (consolidated), the rate premium between the second usage block rate and
16 the third or upper usage block rate is 30%, while for Sedona, Pinewood and Rimrock
17 (consolidated), the rate premium is 25%.⁴¹⁹ For the Superstition system (Apache Junction
18 and Superior), the difference between the initial discounted rate and the second usage
19 block rate is 47%, while the rate premium between the second usage block rate and the
20 upper usage block rate is 32%.⁴²⁰ Staff's "alternative" rate design proposal for Casa
21 Grande and Coolidge (consolidated) is even more extreme, with the difference between

22 ⁴¹⁴ Decision No. 68302 at 40-43.

23 ⁴¹⁵ *Id.* at 43.

24 ⁴¹⁶ *Id.* at Ex. G.

24 ⁴¹⁷ *Id.*

25 ⁴¹⁸ See Staff Final Schedules for identified systems.

25 ⁴¹⁹ *Id.*

26 ⁴²⁰ *Id.*

1 the initial discounted rate and the second usage block rate being 50% and the rate
2 premium between the second usage block rate and the upper rate block being 53%.⁴²¹
3 Moreover, for the Stanfield system, the discount in the first residential usage block is even
4 more dramatic at 70%.⁴²²

5 In short, Staff has proposed a rate design that not only shifts more revenues to be
6 recovered through the commodity rates but then compounds the uncertainty of revenue
7 recovery by the spread between the commodity rates so that more revenues must be
8 recovered from usage in the upper discretionary rate blocks, which is highly unlikely at a
9 time when the Company's customers have been reducing their water use. Staff has
10 provided no explanation for these severe rate design changes. Mr. Michlik testified that
11 Staff elected to increase the percentage spread between the commodity rates while
12 disregarding any events known to have occurred after the end of the test year, including
13 the impact of adverse economic conditions, weather and lower customer water usage
14 because of the impact of imposing inverted block rates on customers.⁴²³ He also testified
15 that Staff normally designs inverted block rates with differences of approximately 25%
16 between the commodity rates for each block.⁴²⁴ That is the rate design used by the
17 Company. Given that Staff's rate design is not supported by any evidence showing why it
18 is necessary, it should be rejected.

19 **d. Other Issues**

20 Staff's proposal to eliminate the monthly minimum service charge for construction
21 water sales and sales of water for resale jeopardizes the Company's ability to recover the
22 cost of providing those services. The Company incurs fixed costs associated with
23 providing service to those customers, as Mr. Reiker explained and as the cost of service

24 ⁴²¹ Ex. S-28.

25 ⁴²² *Id.*

26 ⁴²³ Tr. at 1744-47, 1752-55, 1760-61, 1763-65.

⁴²⁴ Tr. at 1746-47.

1 study demonstrates.⁴²⁵ Meters must be read, bills must be sent, and other administrative
2 costs must be incurred in connection with these accounts. Accordingly, there is no
3 justification for limiting the Company to only a commodity rate based on uncertain usage
4 to recover the Company's fixed costs.

5 C. An Adjustment Is Necessary to Account for the Imposition of Inverted
6 Block Rates for the Northern Group Systems

7 The Company has requested that a "conservation" adjustment be made to test year
8 revenues for the Northern Group systems to account for the downward impact on water
9 use caused by imposition of inverted block rates for those systems. The adjustment would
10 increase revenues for those systems, on a combined basis, by \$308,701.⁴²⁶ In support of
11 this adjustment, Mr. Reiker conducted a multiple regression analysis of the impact of the
12 imposition of inverted block rates on residential water consumption by Casa Grande
13 customers for the period 2005-2007, which controlled for the effects of temperature and
14 precipitation.⁴²⁷ This study demonstrated that that residential consumption will decline by
15 8.7%.⁴²⁸ This result is consistent with the results indicated by numerous studies of price
16 elasticity (i.e., the effect of price on water demand) that have been conducted over the past
17 three decades.⁴²⁹ In his rate design rebuttal testimony, Mr. Reiker presented similar
18 studies for the remaining systems that have inverted block rates in effect which showed
19 that customers in every system except White Tank used less water in each successive
20 month during the sample period, even after controlling for the effects of weather.⁴³⁰

21
22 ⁴²⁵ Ex. A-21 at 11.

23 ⁴²⁶ The adjustment is calculated on line 48 of pages 22-26 of the appendix to Schedule C-2 (Ex.
24 A-19).

25 ⁴²⁷ Ex. A-18 at 18-19, ex. JMR-4; Tr. at 563.

26 ⁴²⁸ Ex. A-18 at 18-19, ex. JMR-4.

⁴²⁹ Ex. A-20 at 38-39 (citing *AWWA Manual M1* at 158). In fact, as Mr. Reiker explained, the
results of his study are actually on the conservative side. *Id.*

⁴³⁰ Ex. A-21 at 13-14, Ex. JMR-RBEX3.

1 In response, Staff and RUCO simply dismissed the studies and other evidence that
2 Mr. Reiker presented. Staff's witness on this issue, Mr. Igwe, questioned whether Mr.
3 Reiker had considered "all possible variables" and further testified that the studies
4 presented by Mr. Reiker were not "conclusive proof that tiered rates led to a loss of
5 revenues."⁴³¹ Similarly, RUCO's witness, Mr. Rigsby, testified that the adjustment should
6 be rejected because it cannot be predicted "with absolute certainty how Northern Group
7 customers will react to the implementation of tiered rates."⁴³² This rigid absolutist
8 reasoning simply ignores the obvious reality about the impact of tiered rates and conflicts
9 with established rate design principles.

10 Fundamentally, there is no dispute that the purpose of inverted block rates is to
11 promote water conservation, which is the principal policy objective of the rate design.⁴³³
12 It is well established that the demand for water is price-elastic. Numerous studies indicate
13 that price elasticity ranges from -.10 to -.30 for residential demand and up to -.80 for
14 commercial and industrial demand.⁴³⁴ Inverted rate blocks, which charge higher rates for
15 increasing consumption, utilize the price-elasticity of the demand for water to encourage
16 customers to reduce their water use. Therefore, it is axiomatic that with the rate premium
17 imposed on usage in the upper rate block, customers will use less water, thereby reducing
18 the Company's revenues and preventing the Company from earning its authorized return.

19 These basic facts are not in dispute. If they were, there would be a serious question
20

21 ⁴³¹ Ex. S-24 at 20-21.

22 ⁴³² Ex. R-27 at 15-16.

23 ⁴³³ E.g., Tr. at 574, 1496-97. See also *AWWA Manual M1* at 100-101. Obviously, the primary
24 goal of the rate design is to set rates at a level that allows the utility a fair opportunity to actually
25 recover its revenue requirement, including its authorized rate of return. E.g., Tr. at 683, 689-90,
26 1766.

⁴³⁴ Ex. A-20 at 38-39; *AWWA Manual M1* at 158. Mathematically, price elasticity is the ratio of
the percentage change in use to the percentage change in price. Because there is an inverse
relationship between price and use, price elasticity coefficients have negative values. For
example, a price elasticity coefficient of -.30 means that a 10% increase in price causes a 3%
decrease in usage.

1 about whether inverted block rates are even necessary or appropriate for Arizona Water.
2 Accordingly, as RUCO's Director acknowledged, it is reasonable to assume that the
3 imposition of inverted block rates will achieve their intended purpose and cause customers
4 to reduce their water usage.⁴³⁵ The studies prepared by Mr. Reiker, based on actual data
5 for the Company, show that residential consumption will decrease by 8.7% with the
6 implementation of inverted block rates. Neither Staff nor RUCO offered any studies or
7 other analysis that contradict Mr. Reiker's studies, nor have they pointed to any errors in
8 his analysis.

9 In response, Staff suggests that the Company's studies fail to take into account
10 other factors affecting water use, such as the recent economic downturn.⁴³⁶ However, the
11 period analyzed by Mr. Reiker, 2005-2007, preceded the economic downturn. As Mr.
12 Reiker explained at hearing, if he had used data from a more recent period (i.e., after the
13 end of the test year), the revenue decrease would be even larger.⁴³⁷ Instead, he used data
14 from the same period used by Staff in its proposal to normalize certain expenses.⁴³⁸
15 Moreover, the studies performed by Mr. Reiker show that home vacancies did not play a
16 role in the water use reductions because those reductions occurred primarily in the May
17 through October period when discretionary water use is highest. If foreclosures and
18 similar factors had caused the decrease, a significant decrease in average residential water
19 use would have occurred in November through April as well.⁴³⁹

20 Staff also objected that the Company did not incorporate any savings, such as
21 reduced water pumping, treatment and distribution costs.⁴⁴⁰ But as Mr. Reiker also

22 ⁴³⁵ Tr. at 1497. *See also* Tr. at 691 (same).

23 ⁴³⁶ *See, e.g.*, Tr. at 1768.

24 ⁴³⁷ Tr. at 565-67.

25 ⁴³⁸ Ex. A-20 at 39. *See also* Ex. S-24 at 15-19 (discussing Staff's adjustments to normalize tank
maintenance expense and several transmission and distribution expense sub-accounts).

26 ⁴³⁹ Ex. A-23.

⁴⁴⁰ *Id.* at 21.

1 explained, to the extent such reductions actually occur, they will be more than offset by
2 increases in other operating expenses. Even though the Company's water sales declined
3 in 2008, its operating expenses were nevertheless some \$2 million greater than in the 2007
4 test year.⁴⁴¹ In addition, Mr. Reiker's analysis was based on the existing inverted block
5 rate designs imposed by the Commission in the previous Eastern and Western Group
6 decisions. As discussed above, the Company is proposing a rate design that increases the
7 spread between rate blocks, while Staff is proposing very extreme rate design. The
8 Company's conservation adjustment applies to only the Northern Group systems, and
9 does not take into account the impact of increasing the commodity rate differences and
10 shifting more revenue recovery into the upper rate block (thereby causing that revenue
11 recovery to be very uncertain) with respect to all of the Company systems. Nor does it
12 consider the impact on commercial water use. Thus, the Company's adjustment is very
13 conservative and likely understates the downward revenue impact of the inverted block
14 rate designs being proposed in this case.

15 In short, all of the parties agree that the purpose of inverted block rates is to
16 implement rate penalties to induce customers to reduce their water usage. It is therefore
17 reasonable to conclude that customers will reduce their water use, especially given the rate
18 designs being proposed, as Ms. Jerich conceded. The Company has presented credible
19 evidence demonstrating that imposing of inverted block rate designs on the Northern
20 Group systems will result in a reduction in water use (based on 2007 usage levels),
21 producing a reduction in revenues of \$308,000. Boiled down, Staff and RUCO simply
22 argue that this evidence should be disregarded because it does not constitute "conclusive
23 proof" that revenues will decline⁴⁴² and the revenue impact cannot be predicted "with
24

25 ⁴⁴¹ Ex. A-20 at 39-40.

26 ⁴⁴² Ex. S-24 at 21.

1 actual certainty.”⁴⁴³ These arguments would impose a burden of proof that could never be
2 met and, moreover, would exceed the burden of proof used in a criminal proceeding
3 involving an alleged capital crime. That is not the Commission’s evidentiary standard in a
4 rate case. Therefore, the Company’s conservation adjustment should be approved.

5 **VI. OTHER ISSUES**

6 **A. Non-Account Water**

7 **1. The Company’s Water Loss Management Program**

8 The Company administers one of the most comprehensive programs for managing
9 water loss of all private water utilities in Arizona.⁴⁴⁴ Non-account water for each of the
10 Company’s systems is tracked monthly and reviewed by each local manager.⁴⁴⁵ Senior
11 management reviews water loss reports, reports on located leaks and repairs, and other
12 monitoring results monthly. The Company has invested substantial capital to acquire its
13 own leak detection equipment for each division and its employees are professionally
14 trained on the operation of the equipment.⁴⁴⁶ This equipment allows the Company to
15 identify the location of water leaks without the need for more labor-intensive and
16 disruptive methods to inspect each section of a distribution system.⁴⁴⁷ The Company
17 further reduces non-account water through timely repairs of water main leaks, breaks, and
18 service line leaks.⁴⁴⁸ In short, non-account water is not something that the Company
19 “takes lightly.”⁴⁴⁹

20 The Company also undertakes extensive efforts to promote and encourage

21 ⁴⁴³ Ex. R-27 at 16.

22 ⁴⁴⁴ Ex. A-10 at 5; Tr. at 358.

23 ⁴⁴⁵ Ex. A-10 at 7-8.

24 ⁴⁴⁶ Ex. A-10 at 10; Tr. at 358-60.

25 ⁴⁴⁷ Additional information regarding the Company’s leak detection efforts can be found on the
Arizona Department of Water Resources website at

www.azwater.gov/AzDWR/WaterManagement/AMAs/documents/HarrellPresentation.pdf

26 ⁴⁴⁸ Ex. A-10 at 9.

⁴⁴⁹ Tr. at 363.

conservation.⁴⁵⁰ The Company has a Conservation Education Program where information on water conservation is distributed throughout the year to customers in all systems. The Company provides free residential water audits and engages in inquiry and resolution of high water use as well as investigation of water waste.⁴⁵¹ The Company's conservation and water loss management programs have resulted in low non-account water levels in most of the Company's systems, as illustrated in the following table:

System ⁴⁵²	Test Year Non-Account Water ⁴⁵³	Updated Non-Account Water ⁴⁵⁴
Lakeside	5.8%	
Pinetop Lakes	15.4%	
Overgaard	6.9%	
Forest Towne	5.7%	
Sedona	7.6%	
Valley Vista	4.5%	
Pinewood	26%	22.6% (May 2009)
Rimrock	11%	
Apache Junction	7.4%	
Superior	18.4%	10.7% (May 2009)
Miami	7.8%	

⁴⁵⁰ *Id.* at 6-7.

⁴⁵¹ *Id.*

⁴⁵² "System" means ADEQ Public Water System or PWS for purposes of this table. *See generally* Ex. S-13, Exhibit KS.

⁴⁵³ *See, generally* Ex. S-13, Ex. KS.

⁴⁵⁴ Ex. A-10 at 15-20.

1	Winkelman	12%	
2	San Manuel	10.7% (10.2%)	10.2% (May 2009)
3	Oracle	9.3%	
4	Sierra Vista	5.4%	
5	Bisbee	16%	
6	Tierra Grande	12.6% (10.2%)	10.2% (in 2008)
7	Casa Grande	6%	
8	Coolidge	9.7%	
9	Stanfield	7.5%	
10	Ajo	9.4%	
11	White Tank	7.6%	

12 To summarize, of the Company's 22 ADEQ-regulated public water systems, 14
13 presently have non-account water under 10%. This leaves only 8 of the 22 systems with
14 non-account water loss in excess of 10%. Of those 8 systems, 3 had test year non-account
15 water of 11%, 12% and 12.6%. By 2008, however, non-account water in one of these
16 systems, Tierra Grande, had been reduced from 12.6% to 10.2%. Similarly, the Company
17 has been able to reduce non-account water in its Superior system from 18.4% during the
18 test year to 10.7% as of May 2009. In short, the Company is serving over 80,000
19 customers in 22 public water systems spread all across the State, and has only three
20 systems with non-account water above 15%. The Company's success speaks for itself,
21 but it also bears recognition by this Commission.

22 **2. What is "Acceptable" Non-Account Water?**

23 Boiled down, this question is at the heart of the dispute between the Company and

1 Staff in this case over non-account water. The term “non-account” speaks more clearly to
2 the reality of delivering water – some water will not be accounted for, some water will be
3 used for fire fighting purposes, some will be physically lost through leaks or theft, and
4 some water, among the billions of gallons pumped, distributed and consumed, will simply
5 not be correctly counted. This is a part and cost of operating a water utility system.
6 Certainly, in the case of the Company, water is not being lost through negligence or
7 inattention. It is undisputed that the Company is well-run and, on its own and at
8 significant expense, has taken significant steps to keep non-account water as low as
9 possible.

10 Staff’s position is non-account water must always be less than 10%.⁴⁵⁵ The
11 Commission has generally agreed in past decisions.⁴⁵⁶ The Company respectfully asserts
12 that a one-size-fits-all standard that ignores the specific characteristics of the water system
13 is inappropriate, as the evidence in this case shows. Instead, the Company urges
14 evaluation of whether a non-account water problem exists on the basis of a “system
15 efficiencies” approach.⁴⁵⁷ In other words, the acceptable non-account water level for a
16 particular water system should take into account that specific system’s age; location;
17 topography (including road type and soil composition); plant configuration (including the
18 distance water has to travel from source of supply to customers); system pressures; and
19 local weather, among other factors.⁴⁵⁸ Application of a rigid standard that says all non-
20 account water over 10% is always unacceptable, or ordering that all water loss over 15%
21 must be eliminated, ignores consideration of these important factors. Simply stated, Ajo
22 and Sedona are not the same.

23 These black-line standards also disregard the cost to bring non-account water

24 ⁴⁵⁵ Tr. at 1196-97, 1199; *see also* Ex. S-13, Ex. KS at Recommendations.

25 ⁴⁵⁶ Tr. at 1196.

26 ⁴⁵⁷ Tr. at 349-52, 365-69.

⁴⁵⁸ *Id.* *See also* Ex. A-10 at 12-15.

1 below a prescribed level, which is substantial in this case. Nowhere in this extensive
2 record is there any indication that Staff considered how the Company is going to fund the
3 investment in new utility plant needed to bring non-account water in all systems to below
4 10% or 15%.⁴⁵⁹ The 10% standard also does not consider any sort of cost/benefit
5 analysis. These shortcomings have led organizations such as the American Water Works
6 Association to advocate for the "holistic" approach advocated by the Company in this
7 case.⁴⁶⁰ When the Company's systems with above average non-account water are
8 evaluated in this more realistic light, taking into account both system-specific
9 characteristics and cost, it is clear that the Company is doing all it can, and spending all
10 that it should, to reduce non-account water.

11 **Bisbee** [Test Year Non-Account Water – 16%]⁴⁶¹

12 Locating waterline leaks within Bisbee is extremely difficult, time consuming, and
13 costly due to extremely thick street sections comprising brick roads, that were
14 subsequently overlaid with concrete, and then, more recently paved. Many leaks never
15 reach the surface, and those that do are hard to repair below the 12-inch thick road
16 surfaces all over the scenic town. Additionally, due to the significant elevation changes
17 and distance from the well field to the northern-most portion of town, system pressures
18 routinely exceed 100 psig (pounds per square inch gauge). The transmission line from the
19 Company's well field to the City of Bisbee is nearly six miles long and begins at the well
20 field with pressures around 600 psig. Waterlines under higher pressures experience higher
21 water loss.

22 ⁴⁵⁹ In fact, Staff is currently arguing in Docket No. W-01445A-08-0607 that the Company cannot
23 afford to borrow on its short-term credit line at levels necessary to fund needed capital project and
24 other system repairs due to its poor earnings. *E.g.*, Staff's Response to Company's Reply at 2-3.

24 ⁴⁶⁰ Tr. at 784-85; Ex. A-24. The AWWA is an association made up of public and private utility
25 interests that, among other things, recommends standards for the operation of public water
26 systems. *Id.*

26 ⁴⁶¹ Except where specifically cited otherwise, this system-specific discussion of non-account
water is supported by Ex. A-10 at 21-28. This evidence is undisputed.

1 The Bisbee water system is experiencing the same challenges as much of the
2 country — its infrastructure is aging. Incredibly, many of the waterlines within the Bisbee
3 system are now a century old, and replacement of miles of waterline nearing or at the end
4 of their useful life would require an enormous capital investment. The estimated cost to
5 replace 60% of the waterlines in the Bisbee water system is more than \$23,500,000. The
6 current rate base for Bisbee is approximately \$4.6 million, or less than 20% of the cost of
7 replacing only 60% of the water distribution system.⁴⁶²

8 **Pinewood** [May 2009 Non-Account Water – 22.6%]

9 The relatively high non-account water level experienced by the Pinewood system,
10 located 17 miles south of Flagstaff, is due to freezing water meters and service lines and
11 failures in transite pipe. In winter, with little snow to insulate the ground due to drought,
12 the freeze depth increases, increasing the number of breaks and increasing non-account
13 water. When meters freeze, the Company loses its ability to fully account for the water it
14 delivers. These leaks can lead to significant water loss that may go unnoticed for a month,
15 until the next meter reading. Identification of leaks within the Pinewood system is also
16 made more difficult due to local soil conditions, which allow for the rapid percolation of
17 water at shallow depths. These soil conditions also take a direct toll on the Company's
18 water lines in Pinewood. At the time of construction of the delivery system, transite pipe
19 was considered acceptable. Today, it is known that the use of transite pipe in rocky
20 conditions results in numerous pipeline breaks. Finally, low year-round occupancy rates
21 and overall lower water use make non-account water appear higher than the average water
22 system when expressed as a percentage, adding further to the challenge of finding,
23 recording and addressing non-account water in the Pinewood system.

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26 ⁴⁶² Company Final Schedules. Sch. A-1, page 6 (Bisbee).

1 As with the Company's Bisbee system, a significant portion of the Pinewood
2 distribution system would require replacement in order to reduce non-account water. The
3 Company has analyzed the costs to replace the transite waterlines, a significant cause of
4 lost water, with stronger ductile iron waterlines. Replacement of 60% of the waterlines is
5 estimated to cost \$7,350,000. The current rate base for Pinewood is approximately
6 \$1,900,000.⁴⁶³

7 **Pinetop Lakes** [Test Year Non-Account Water – 15.4%]

8 Like Pinewood, non-account water in the Pinetop Lakes water system is due
9 largely to winter conditions and changes in use due to seasonal consumption. Like
10 Pinewood, these conditions are outside the Company's control, and like Pinewood and
11 Bisbee, the cost of waterline replacement to resolve the remaining levels of non-account
12 water would be extremely costly and lead to significant rate increases.

13 **Rimrock** [Test Year Non-Account Water – 11%]

14 Non-account water in Rimrock results from a variety of causes, including older
15 waterlines and leaks that are difficult to locate. However, with the Company's increased
16 efforts in managing non-account water and its purchase of additional leak detection
17 equipment, the Company has been able to stabilize non-account water in this system. To
18 reduce lost water further, a portion of the existing waterlines would require replacement.
19 The Company estimates that replacement of 35% of the waterlines in Rimrock would cost
20 approximately \$3,800,000, more than 1.5 times Rimrock's current rate base of
21 approximately \$2,300,000.⁴⁶⁴

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25 ⁴⁶³ Company Final Schedules, Sch. A-1, page 21 (Pinewood).

26 ⁴⁶⁴ Company Final Schedules, Sch. A-1, page 22 (Rimrock).

1 **San Manuel** [May 2009 Non-Account Water – 10.2%]

2 Non-account water in San Manuel is due to a variety of factors, including old water
3 mains and problematic service lines. To date, the Company has used leak detection
4 equipment, an aggressive meter replacement program, increased system monitoring and
5 the replacement of a problematic section of antiquated spiral-welded steel water line in
6 2008 to reduce non-account water. As a result of these efforts, non-account water has
7 been trending downward. To date, non-account water has dropped to 10.2% as of May
8 2009. With these continuing efforts, the Company expects to reduce non-account water to
9 less than 10% in the near future in San Manuel.

10 **Superior** [May 2009 Non-Account Water – 10.7]

11 The Superior water system presents unique non-account water challenges, and has
12 been the subject of presentations by various Commissioners regarding the need for
13 flexibility in applying an absolute non-account water standard. The reasons for the
14 application of a more flexible standard were the distance from the source of supply to the
15 Town of Superior, abnormally high water temperatures requiring evaporative cooling, and
16 the high cost of improvements needed to reduce non-account water. With the Company's
17 increased use of its leak detection equipment and increased monitoring of the 23-mile
18 transmission pipeline, non-account water has been declining to the recent level of 10.7%
19 as of May 2009.

20 **Tierra Grande** [2008 Non-Account Water – 10.2%]

21 In the Tierra Grande system the Company has increased its efforts in monitoring
22 this system and has been able to reduce the percentage of non-account water. Non-
23 account water for 2008 was 10.2%. With these continuing efforts, the Company expects
24 to reduce non-account water in Tierra Grande to less than 10% in the near future.

1 **Winkelman** [Test Year Non-Account Water – 12%]

2 The Winkelman water system experienced a significant loss in the number of
3 customers due to the large winter storm event of 1993, which caused the Gila River to run
4 at flood stage for an extended period. The river overflowed and destroyed the homes of
5 approximately 30% of the Company's Winkelman system customers. However, the lines
6 that served these homes still must remain pressurized and in service for the few homes left
7 near the end of those lines. Because of a steady increase in non-account water in this
8 system, the Company has increased leak monitoring efforts, and various small leaks were
9 located and repaired. However, no large leaks were located. In August 2008, through the
10 use of advanced leak detection equipment, a leak was detected in very sandy soils, which
11 allow leaks to go undetected. After Company employees repaired the leak, non-account
12 water in the Winkelman system has steadily declined, and the Company is on track to
13 reduce lost water to less than 10% in that system.

14 These system specific facts make clear the flaw in employing a one-size fits all
15 standard. The Company has a very cost-effective non-account water management
16 program in place. The Company takes all reasonable operating steps to reduce leaks and
17 detect and repair leaks, and the evidence shows that these efforts have been working.
18 Non-account water throughout the Company's 22 public water systems is at the lowest
19 possible levels, absent cost-prohibitive waterline replacements.

20 **3. Staff's Recommended "Corrected Measures" Are Unnecessary**

21 Initially, Staff asserted that the Company should be ordered to bring water loss in
22 all systems below 10% by December 31, 2010.⁴⁶⁵ Although Staff offered no explanation
23 of how the Company should accomplish this requirement, Staff's recommendation did
24 concede that such reduction might not be cost-effective. In that case, Staff recommended
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26 ⁴⁶⁵ Ex. S-13, Ex. KS at Recommendations.

1 that the Company be ordered to show that such reduction was not cost-effective, but “in
2 no case shall water loss be allowed to remain above 15 percent.”⁴⁶⁶ During the hearing,
3 Staff’s witnesses confirmed that Staff is asking the Commission to order the Company to
4 reduce non-account water to less than 10% by December 31, 2010 unless it is shown not
5 to be cost-effective.⁴⁶⁷ Thereafter, Staff’s witness seemingly softened Staff’s stance and
6 indicated that the 15% level might not be an “absolute”.⁴⁶⁸

7 Candidly, Staff’s position in this case and, more specifically, the relief it seeks, is
8 not clear. But the Company’s position is clear. If Staff needs more information about the
9 Company’s ongoing efforts to monitor and address non-account water, the Company will
10 provide Staff with the reports the Company produces in the ordinary course of business.⁴⁶⁹
11 Anything more than that is unnecessary. The Company is already doing everything
12 reasonable and prudent to discover, repair and limit non-account water sources. There is
13 not a shred of evidence in this case suggesting otherwise or suggesting that further study
14 will result in a cost-effective means of reducing non-account water below the already low
15 levels the Company achieves in all but a small few of its systems.

16 Nor does the Company have the means to undertake the one remedy that would
17 substantially reduce non-account water – waterline replacements at costs measured in tens
18 of millions of dollars.⁴⁷⁰ Whatever relief it is that Staff seeks, if it would arbitrarily
19 require the Company to further reduce non-account water irrespective of individual
20 system characteristics and costs, it is not in the public interest.

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⁴⁶⁶ *Id.*

23 ⁴⁶⁷ Tr. at 1196.

24 ⁴⁶⁸ Tr. at 1201-02.

25 ⁴⁶⁹ Tr. at 356.

26 ⁴⁷⁰ Ex. A-6 at 4-7. *See also* Staff’s Response to Company’s Reply at 2-3, Docket No. W-01445A-08-0607 (asserting Company’s financial condition is inadequate to support requested financing approval).

1 **B. Best Management Practices**

2 An additional issue was raised by Chairman Mayes when Mr. Garfield was recalled
3 during the hearing concerning whether it is appropriate to impose additional “best
4 management practices” (“BMPs”) and, if so, what kind of surcharge or other mechanism
5 should be approved to recover the additional costs associated with implementing them.⁴⁷¹
6 Unfortunately, the issue has not been addressed by any of the parties to this proceeding,
7 other than the Chairman’s brief examination of Mr. Garfield and Mr. Olea’s testimony
8 that Staff is not recommending the implementation of any BMPs in this case.⁴⁷² Given the
9 complexity of this issue and the fact that it has not been evaluated by the parties, the
10 Company believes this issue should be considered, if at all, in a second phase of this rate
11 case.

12 Briefly, and by way of background, BMPs refer to water conservation measures
13 that must be adopted by large municipal providers as a result of legislation enacted in
14 2007, which amended A.R.S. § 45-566.01.⁴⁷³ Previously, this statute required the
15 Director of the Arizona Department of Water Resources (“ADWR”) to include in
16 ADWR’s Third Management Plans a non-per capita conservation program for municipal
17 providers (i.e., cities, towns and private water companies) as an optional alternative to a
18 conservation program that requires such providers to achieve reductions in their
19 customers’ per capita groundwater use.⁴⁷⁴ The 2007 amendments, however, directed
20 ADWR to eliminate the per capita use limitation requirement and, instead, to require most
21 municipal providers, including Arizona Water, to implement an education program, a
22 metering program, and one or more BMPs to be selected from a list of BMPs adopted by

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24 ⁴⁷¹ See Tr. at 828-38.

25 ⁴⁷² Tr. at 1061.

26 ⁴⁷³ 2007 Ariz. Sess. Laws, Ch. 139, § 2.

⁴⁷⁴ *Id.* See also A.R.S. § 45-566 (governing ADWR’s promulgation of groundwater management plans for the third management period, 2000 to 2010).

1 ADWR.⁴⁷⁵

2 Arizona Water has six systems that are subject to the amended non-per capita
3 conservation program: Casa Grande, Apache Junction, Coolidge, White Tank, Oracle and
4 Superior.⁴⁷⁶ As Mr. Garfield testified, the Company previously filed provider profiles for
5 each of those systems, which include the BMPs that have been approved by ADWR and
6 implemented for those systems.⁴⁷⁷ With two exceptions,⁴⁷⁸ the Company's remaining
7 systems are located outside of an active management area and, under Arizona law, are not
8 subject to regulation under the municipal conservation program.⁴⁷⁹

9 Chairman Mayes apparently contemplated additional BMPs for the Company's
10 water systems that are located within an active management area, which would be
11 combined with a cost-recovery mechanism to ensure Arizona Water is able to recover the
12 cost of going beyond what ADWR has required under the Groundwater Code.⁴⁸⁰ She also
13 contemplated that this issue would be addressed by Staff.⁴⁸¹ None of the parties addressed
14 the issue, however, nor were they in a position to do so given the hearing's length and
15 complexity.⁴⁸² Thus, there is no evidence in the record at this time on which an informed
16 decision can be based. Under the circumstances, the Company believes it is inappropriate
17 to consider the issue at this time. But the Commission could convene a second phase of

18 ⁴⁷⁵ A.R.S. § 45-566.01.

19 ⁴⁷⁶ ADWR treats Superior and Apache Junction as separate water systems for the purpose of
20 determining their compliance with the Groundwater Code and the applicable Third Management
21 Plan requirements.

22 ⁴⁷⁷ Tr. at 828, 830-32.

23 ⁴⁷⁸ The Company's Stanfield and Tierra Grande systems are located in the Pinal Active
24 Management Area, but serve less than 250 acre-feet of water for non-irrigation use during a
25 calendar year. Consequently, they are classified as "small municipal providers" and have been
26 exempted by ADWR from the non-per capita conservation program. See Third Management Plan
200-2010 Pinal Active Management Area 5-101 (43), 5-111 (ADWR 1999).

⁴⁷⁹ Compare A.R.S. §§ 45-451 with 45-453.

⁴⁸⁰ Tr. at 832.


⁴⁸¹ Tr. at 830-31.

⁴⁸² In fact, when the issue was raised with Mr. Garfield on the fourth day of the hearing, the
Company had already completed the presentation of its witnesses.

1 this case to consider the issues of whether additional BMPs are appropriate and how the
2 costs associated with implementing them would be recovered. The Commission could
3 readily call for such a second phase when it issues its decision on the Company's rate
4 application in this case.

5 RESPECTFULLY SUBMITTED this 16th day of October, 2009.

6 ARIZONA WATER COMPANY

7
8 By: 
9 Robert W. Geake
10 Vice President and General Counsel
11 ARIZONA WATER COMPANY
12 Post Office Box 29006
13 Phoenix, Arizona 85038-9006
14 and

15 Norman D. James
16 Jay L. Shapiro
17 Fennemore Craig
18 3003 North Central Avenue
19 Suite 2600
20 Phoenix, Arizona 85012
21 Attorneys for Applicant
22 Arizona Water Company

23 An original and thirteen (13) copies of
24 the foregoing were delivered this 16th day
25 of October, 2009 to:

26 Docketing Supervisor
Docket Control Division
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

A copy of the foregoing was delivered this
16th day of October, 2009 to:

Dwight D. Nodes
Assistant Chief Administrative Law Judge
Hearing Division
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

1 Wesley C. Van Cleve, Attorney
2 Nancy L. Scott, Attorney
3 Legal Division
4 Arizona Corporation Commission
5 1200 West Washington Street
6 Phoenix, Arizona 85007

7 Michelle Wood, Attorney
8 Residential Utility Consumer Office
9 1110 West Washington Street, Suite 220
10 Phoenix, Arizona 85007

11 A copy of the foregoing was mailed this
12 16th day of October, 2009 to:

13 Nicholas J. Enoch
14 Jarrett J. Haskovec
15 Lubin & Enoch, PC
16 349 North Fourth Avenue
17 Phoenix, Arizona 85003
18 Attorneys for IBEW Local 387

19 Michelle Van Quatham
20 Ryley, Carlock & Applewhite
21 One North Central Avenue, Suite 1200
22 Phoenix, Arizona 85004
23 Attorneys for Abbott Laboratories

24 By: Mary House

25 2245163
26

A

[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]	[J]		
Line No.	System	Movement in Hearings	Description	DWR Well No.	NARUC Acct.	Original Cost	Accumulated Depreciation At 12/31/2007	CIAC Amt	Company Position	Staff Position	RUCO Position
10	Bisbee	Y	5x8' Metal Bldg. - Black Gap Repeater Station		397	\$ 704	\$ 746	n/a	Retire - Remove Original Cost from UPIS & Accum. Depr.	Disallow - Not Used/Useful	Retire equal amounts of plant and accm depr
16	Casa Grande	Y	Inactive	55-616583	314	\$ 115,205	\$ 101,202	n/a	Retire - Remove Original Cost from UPIS & Accum. Depr.	Disallow - Not Used/Useful	Retire equal amounts of plant and accm depr
19	Casa Grande	Y	Inactive	55-616602	314	\$ 373,272	\$ 211,888	n/a	Retire - Remove Original Cost from UPIS & Accum. Depr.	Disallow - Not Used/Useful	Retire equal amounts of plant and accm depr
2	Pinewood	Y	Inactive	55-616650	314	\$ 13,512	\$ 10,674	n/a	Retire - Remove Original Cost from UPIS & Accum. Depr.	Disallow - Not Used/Useful	Retire equal amounts of plant and accm depr
4	Rimrock	Y	Montezuma Haven Well #1	55-903289	314	\$ 62,097	\$ 60,312	n/a	Retire - Remove Original Cost from UPIS & Accum. Depr.	Disallow - Not Used/Useful	Retire equal amounts of plant and accm depr
13	Sedona	Y	Inactive	55-616660	314	\$ 45,989	\$ 56,553	n/a	Retire - Remove Original Cost from UPIS & Accum. Depr.	Disallow - Not Used/Useful	Retire equal amounts of plant and accm depr
16	Sedona	Y	Valley Vista Well #1	55-616672	314	\$ 184,328	\$ 159,932	n/a	Retire - Remove Original Cost from UPIS & Accum. Depr.	Disallow - Not Used/Useful	Retire equal amounts of plant and accm depr
17	Sedona	Y	Sunup Well	55-632272	314	\$ 78,804	\$ 111,236	n/a	Retire - Remove Original Cost from UPIS & Accum. Depr.	Disallow - Not Used/Useful	Retire equal amounts of plant and accm depr
19	Sedona	Y	Automatic Controls - Sunup Well Site		314	\$ 555	\$ 640		Retire - Remove Original Cost from UPIS & Accum. Depr.	Disallow - Not Used/Useful	Retire equal amounts of plant and accm depr
21	Sedona	Y	5 hp Pump/Panel - Sunup Well Site		325	\$ 6,761	\$ 2,889	n/a	Retire - Remove Original Cost from UPIS & Accum. Depr.	Disallow - Not Used/Useful	Retire equal amounts of plant and accm depr
3	Starfield	Y	16,000 Gallon Storage Tank - Table Top Well #3		342	\$ 5,100	\$ 6,214	n/a	Retire - Remove Original Cost from UPIS & Accum. Depr.	Disallow - Not Used/Useful	Retire equal amounts of plant and accm depr
4	Superstition	Y	10x10 Block Bldg - Queen Creek Pump Station		321	\$ 1,173	\$ 1,486	n/a	Retire - Remove Original Cost from UPIS & Accum. Depr.	Disallow - Not Used/Useful	Retire equal amounts of plant and accm depr
6	Superstition	Y	Automatic Controls - Queen Creek Pump Station		325	\$ 7,684	\$ 6,329	n/a	Retire - Remove Original Cost from UPIS & Accum. Depr.	Disallow - Not Used/Useful	Retire equal amounts of plant and accm depr
7	Superstition	Y	Filter System - Queen Creek Pump Station		332	\$ 3,057	\$ 1,973	n/a	Retire - Remove Original Cost from UPIS & Accum. Depr.	Disallow - Not Used/Useful	Retire equal amounts of plant and accm depr
8	Superstition	Y	20x10' Storage Tank - Desert Wells 1-3		342	\$ 500	\$ 655	n/a	Retire - Remove Original Cost from UPIS & Accum. Depr.	Disallow - Not Used/Useful	Retire equal amounts of plant and accm depr
9	Superstition	Y	Mobile Radio Base Station - Office/Warehouse		397	\$ 7,088	\$ 4,553	n/a	Retire - Remove Original Cost from UPIS & Accum. Depr.	Disallow - Not Used/Useful	Retire equal amounts of plant and accm depr
11	Winkelman	Y	Well #2	55-6156694	314	\$ 66,360	\$ 79,635	n/a	Retire - Remove Original Cost from UPIS & Accum. Depr.	Disallow - Not Used/Useful	Retire equal amounts of plant and accm depr
RUCO removed original cost from UPIS and Accum Depr											
13	Miami	Y	2 Booster Pumps(100 hp)/Panel - Bandy Heights Well #17		325	\$ 201,695	\$ 41,509	n/a	Currently in use	Currently in use	Disallow - Not Used/Useful
12	Sedona	Y	Sedona Golf Resort Well	55-518969	314	\$ 973,264	\$ 441,132	n/a	Currently in use - Co. originally provided incorrect DWR No. 55-516201	Currently in use	Disallow - Not Used/Useful
14	Sedona	Y	Well #6	55-616662	314	\$ 103,222	\$ 153,723	n/a	Currently in use	Currently in use	Disallow - Not Used/Useful
Staff modified its position to match Company											
10	Coolidge Sedona	Y	Well #11	55-210293	314	\$ 839,736	\$ 13,142	\$ 839,736	CWIP (Do not include in rate base)	Disallow - Not Used/Useful	Disallow - Not Used/Useful
15	Sedona	Y	Post Test Year Plant - WA 1-4011 - Carroll Canyon Well		314	\$ 413,817	\$ 1,249	n/a	Not used & Useful - Remove from Rate Base	Disallow - Not Used/Useful	Disallow - Not Used/Useful
1	Superstition	Y	Ranch 160 Well #1	55-583450	314	\$ 316,447	\$ 60,109	n/a	CWIP (Not in Rate Base)	Disallow - Not used/Useful	Disallow - Not used/Useful
2	Superstition	Y	Ranch 160 Well #2	55-588620	314	\$ 484,606	\$ 79,500	\$ 484,606	CWIP (Not in Rate Base)	Disallow - Not Used/Useful	Disallow - Not Used/Useful
Company agreed to remove these items including CIAC from rate base											

[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]	[J]		
Line No.	System	Movement in Hearings	Description	DWR Well No.	NARUC Acct.	Original Cost	Accumulated Depreciation At 12/31/2007	CIAC Amt	Company Position	Staff Position	RUCO Position
17	Casa Grande	N	Well #14	55-616598	314	\$ 159,393	\$ 135,923	n/a	Currently in use - Co. originally provided incorrect DWR No. 55-613443	Disallow - Not Used/Useful base	Currently in Use - Include in rate base
3	Pinewood	N	Post Test Year Plant - Electrical Panel (WA 1-4308 - Post Test Year) - Well No. 10		325	\$ 40,553	\$ 1,191	n/a	Post-Test Year Plant - Placed in service on July 10, 2009	Disallow - Not Used/Useful	Disallow - Not Used/Useful
1	Sedona	N	Post Test Year Plant - WA 1-4267b - ADOOT Hwy 179 project		343	\$ 1,890,680	\$ 16,922	n/a	Currently in use - Include in rate base	Currently in use - Include in rate base	Disallow 35% as not used/useful - Post test year plant
18	Sedona	N	8' x 12' Block Building - Sunup Well Site		314	\$ 469	\$ 310	n/a	Currently in use - Include in rate base	Disallow - Not Used/Useful	Currently in use - Include in rate base
20	Sedona	N	Fence - Sunup Well Site		314	\$ 11,689	\$ 5,601	n/a	Currently in use - Include in rate base	Disallow - Not Used/Useful	Currently in use - Include in rate base
22	Sedona	N	Well #13 - Valley Vista		314	\$ 1,597,759	\$ 20,691	n/a	Currently in use - Include in rate base	Currently in use - Include in rate base	Disallow - Not Used/Useful - Post test year plant
2	Stanfield	N	Liquid Chlorinator & Building - Table Top Well #3		332	\$ 35,041	\$ 7,904	n/a	Currently in Use - Include in rate base	Disallow - Not Used/Useful	Disallow - Not Used/Useful
3	Superstition	N	Fence - Queen Creek Pump Station		321	\$ 7,306	\$ 2,255	n/a	Currently in use - Include in rate base	Disallow - Not Used/Useful	Currently in Use - Include in rate base
4	White Tank	N	Fence - Mar West Well #5		314	\$ 2,430	\$ 1,757	n/a	Currently in use - Include in rate base	Disallow - Not Used/Useful	Currently in use - Include in rate base
7	White Tank	N	Hypochlorinator Cabinet - Well #8		331	\$ 746	\$ 130	n/a	Currently in use - Include in rate base	Disallow - Not Used/Useful	Disallow - Not Used/Useful
							\$ 45,523	\$ 12,045	No movement on these items		
14	Casa Grande	N	Well #34	55-616588	314	\$ 22,742	\$ 22,923	n/a	Plant held for future use - was previously in use	Disallow - Not Used/Useful	Disallow - Not Used/Useful
15	Casa Grande	N	Well #9	55-616594	314	\$ 136,862	\$ 173,397	n/a	Plant held for future use - was previously in use	Disallow - Not Used/Useful	Disallow - Not Used/Useful
18	Casa Grande	N	Inactive	55-616597	314	\$ 248,844	\$ 167,037	n/a	Plant held for future use - was previously in use	Disallow - Not Used/Useful	Disallow - Not Used/Useful
9	Coolidge	N	Well #1	55-616686	314	\$ 16,588	\$ 33,046	n/a	Plant held for future use - was previously in use	Disallow - Not Used/Useful	Disallow - Not Used/Useful
11	Lakeside	N	Well #1	55-616581	314	\$ 313,824	\$ 207,265	n/a	Plant held for future use - was previously in use	Disallow - Not Used/Useful	Disallow - Not Used/Useful
12	Miami	N	Well #23	55-528263	314	\$ 77,542	\$ 34,813	n/a	Plant held for future use - was previously in use	Disallow - Not Used/Useful	Disallow - Not Used/Useful
1	Stanfield	N	6,000 Gallon Pressure Tank - Table Top Well #3		321	\$ 2,500	\$ 2,960	n/a	Plant held for future use - was previously in use	Disallow - Not Used/Useful	Disallow - Not Used/Useful
5	Superstition	N	5 Pumps/Panel - Queen Creek Pump Station		325	\$ 57,030	\$ 80,620	n/a	Plant held for future use - was previously in use	Disallow - Not Used/Useful	Disallow - Not Used/Useful
5	White Tank	N	5,000 Gallon Pressure Tank - Mar West Well #5		321	\$ 1,752	\$ 1,257	n/a	Plant held for future use - was previously in use	Disallow - Not Used/Useful	Disallow - Not Used/Useful
6	White Tank	N	2 Booster Pumps (20 hp & 10 hp)/Panels - Mar West Well #5		325	\$ 33,352	\$ 25,950	n/a	Plant held for future use - was previously in use	Disallow - Not Used/Useful	Disallow - Not Used/Useful
8	White Tank	N	Hypochlorinator Cabinet - Well #7 - Warehouse		331	\$ 158	\$ 154	n/a	Plant held for future use - was previously in use	Disallow - Not Used/Useful	Disallow - Not Used/Useful
							\$ 911,194	\$ 749,421	No movement on these items		

B

PRINCIPLES *of* CORPORATE FINANCE

N I N T H E D I T I O N

RICHARD A. BREALEY

Professor of Finance
London Business School

STEWART C. MYERS

Robert C. Merton (1970) Professor of Finance
Sloan School of Management
Massachusetts Institute of Technology

FRANKLIN ALLEN

Nippon Life Professor of Finance
The Wharton School
University of Pennsylvania



**McGraw-Hill
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Boston Burr Ridge, IL Dubuque, IA New York San Francisco St. Louis
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8

CHAPTER EIGHT

INTRODUCTION TO RISK, RETURN, AND THE OPPORTUNITY COST OF CAPITAL

WE HAVE MANAGED to go through seven chapters without directly addressing the problem of risk, but now the jig is up. We can no longer be satisfied with vague statements like "The opportunity cost of capital depends on the risk of the project." We need to know how risk is defined, what the links are between risk and the opportunity cost of capital, and how the financial manager can cope with risk in practical situations.

In this chapter we concentrate on the first of these issues and leave the other two to Chapters 9 and 10. We start by summarizing more than

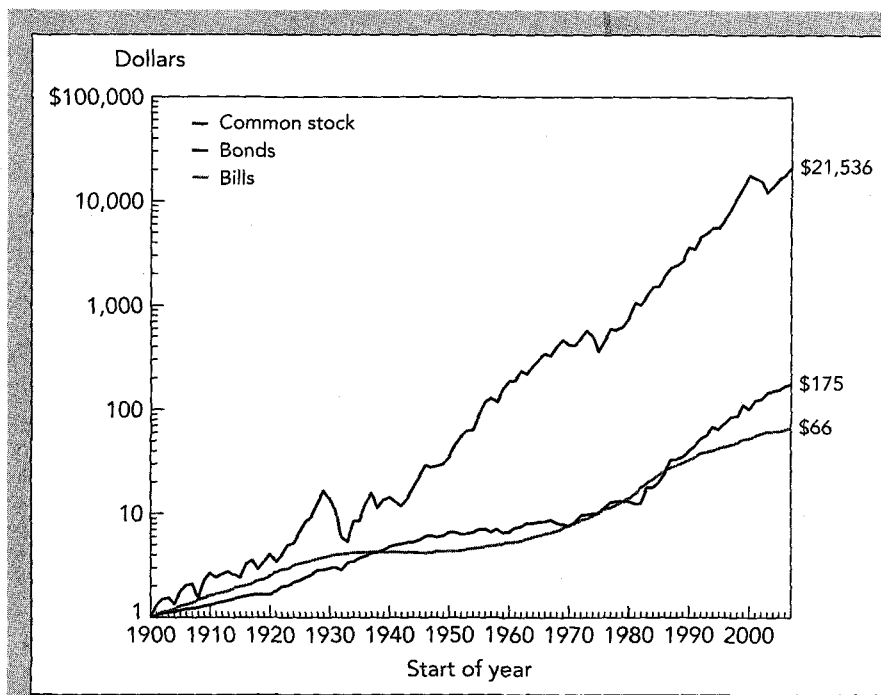
100 years of evidence on rates of return in capital markets. Then we take a first look at investment risks and show how they can be reduced by portfolio diversification. We introduce you to beta, the standard risk measure for individual securities.

The themes of this chapter, then, are portfolio risk, security risk, and diversification. For the most part, we take the view of the individual investor. But at the end of the chapter we turn the problem around and ask whether diversification makes sense as a corporate objective.

8.1

OVER A CENTURY OF CAPITAL MARKET HISTORY IN ONE EASY LESSON

Financial analysts are blessed with an enormous quantity of data. There are comprehensive databases of the prices of U.S. stocks, bonds, options, commodities, as well as huge amounts of data for securities in other countries. We will focus on a

**FIGURE 8.1**

How an investment of \$1 at the start of 1900 would have grown, assuming reinvestment of all dividend and interest payments.

Source: E. Dimson, P. R. Marsh, and M. Staunton, *Triumph of the Optimists: 101 Years of Investment Returns* (Princeton, NJ: Princeton University Press, 2002), © 2002 Reprinted by permission of Princeton University Press; with updates provided by the authors.

study by Dimson, Marsh, and Staunton that measures the historical performance of three portfolios of U.S. securities.¹

1. A portfolio of Treasury bills, that is, U.S. government debt securities maturing in less than one year.²
2. A portfolio of U.S. government bonds.
3. A portfolio of U.S. common stocks.

These investments offer different degrees of risk. Treasury bills are about as safe an investment as you can make. There is no risk of default, and their short maturity means that the prices of Treasury bills are relatively stable. In fact, an investor who wishes to lend money for, say, three months can achieve a perfectly certain payoff by purchasing a Treasury bill maturing in three months. However, the investor cannot lock in a *real* rate of return: There is still some uncertainty about inflation.

By switching to long-term government bonds, the investor acquires an asset whose price fluctuates as interest rates vary. (Bond prices fall when interest rates rise and rise when interest rates fall.) An investor who shifts from bonds to common stocks shares in all the ups and downs of the issuing companies.

Figure 8.1 shows how your money would have grown if you had invested \$1 at the start of 1900 and reinvested all dividend or interest income in each of the three portfolios.³ Figure 8.2 is identical except that it depicts the growth in the *real* value of the portfolio. We will focus here on nominal values.

¹ See E. Dimson, P. R. Marsh, and M. Staunton, *Triumph of the Optimists: 101 Years of Investment Returns* (Princeton, NJ: Princeton University Press, 2002).

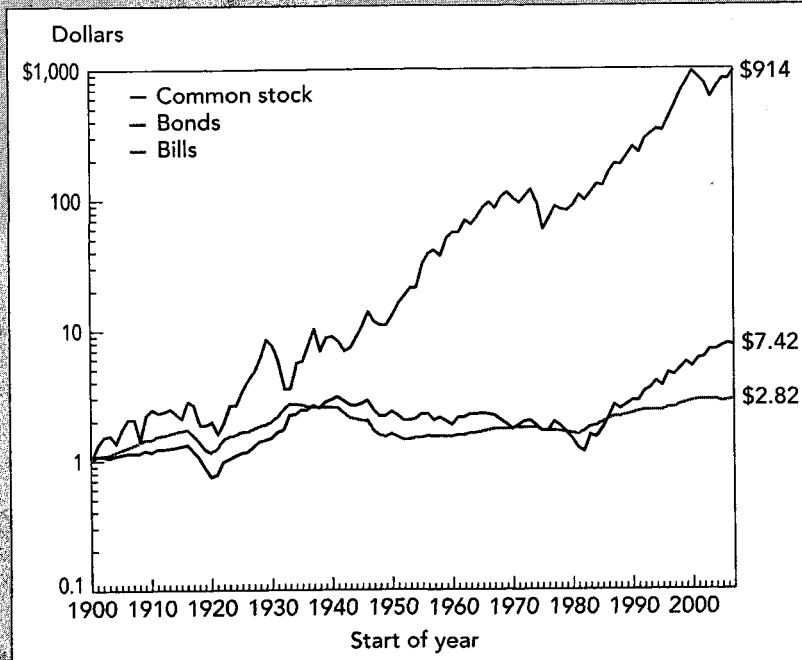
² Treasury bills were not issued before 1919. Before that date the interest rate used is the commercial paper rate.

³ Portfolio values are plotted on a log scale. If they were not, the ending values for the common stock portfolio would run off the top of the page.

FIGURE 8.2

How an investment of \$1 at the start of 1900 would have grown in real terms, assuming reinvestment of all dividend and interest payments. Compare this plot with Figure 8.1, and note how inflation has eroded the purchasing power of returns to investors.

Source: E. Dimson, P. R. Marsh, and M. Staunton, *Triumph of the Optimists: 101 Years of Investment Returns* (Princeton, NJ: Princeton University Press, 2002), © 2002. Reprinted by permission of Princeton University Press; with updates provided by the authors.

**TABLE 8.1**

Average rates of return on U.S. Treasury bills, government bonds, and common stocks, 1900–2006 (figures in % per year)

Source: E. Dimson, P. R. Marsh, and M. Staunton, *Triumph of the Optimists: 101 Years of Investment Returns*, (Princeton, NJ: Princeton University Press, 2002), © 2002. Reprinted by permission of Princeton University Press; with updates provided by the authors.

	Average Annual Rate of Return		Average Risk Premium (Extra Return versus Treasury Bills)
	Nominal	Real	
Treasury bills	4.0	1.1	0
Government bonds	5.2	2.4	1.2
Common stocks	11.7	8.5	7.6

Investment performance coincides with our intuitive risk ranking. A dollar invested in the safest investment, Treasury bills, would have grown to \$66 by the end of 2006, barely enough to keep up with inflation. An investment in long-term Treasury bonds would have produced \$175. Common stocks were in a class by themselves. An investor who placed a dollar in the stocks of large U.S. firms would have received \$21,536.

We can also calculate the rate of return from these portfolios for each year from 1900 to 2006. This rate of return reflects both cash receipts—dividends or interest—and the capital gains or losses realized during the year. Averages of the 107 annual rates of return for each portfolio are shown in Table 8.1.

Since 1900 Treasury bills have provided the lowest average return—4.0% per year in *nominal* terms and 1.1% in *real* terms. In other words, the average rate of

inflation over this period was about 3% per year. Common stocks were again the winners. Stocks of major corporations provided an average nominal return of 11.7%. By taking on the risk of common stocks, investors earned a risk premium of $11.7 - 4.0 = 7.6\%$ over the return on Treasury bills.⁴

You may ask why we look back over such a long period to measure average rates of return. The reason is that annual rates of return for common stocks fluctuate so much that averages taken over short periods are meaningless. Our only hope of gaining insights from historical rates of return is to look at a very long period.⁵

Arithmetic Averages and Compound Annual Returns

Notice that the average returns shown in Table 8.1 are arithmetic averages. In other words, we simply added the 107 annual returns and divided by 107. The arithmetic average is higher than the compound annual return over the period. The 107-year compound annual return for the S&P index was 9.8%.⁶

The proper uses of arithmetic and compound rates of return from past investments are often misunderstood. Therefore, we call a brief time-out for a clarifying example.

Suppose that the price of Big Oil's common stock is \$100. There is an equal chance that at the end of the year the stock will be worth \$90, \$110, or \$130. Therefore, the return could be -10% , $+10\%$, or $+30\%$ (we assume that Big Oil does not pay a dividend). The *expected* return is $\frac{1}{3}(-10 + 10 + 30) = +10\%$.

If we run the process in reverse and discount the expected cash flow by the expected rate of return, we obtain the value of Big Oil's stock:

$$PV = \frac{110}{1.10} = \$100$$

The expected return of 10% is therefore the correct rate at which to discount the expected cash flow from Big Oil's stock. It is also the opportunity cost of capital for investments that have the same degree of risk as Big Oil.

Now suppose that we observe the returns on Big Oil stock over a large number of years. If the odds are unchanged, the return will be -10% in a third of the years, $+10\%$ in a further third, and $+30\%$ in the remaining years. The arithmetic average of these yearly returns is

$$\frac{-10 + 10 + 30}{3} = +10\%$$

⁴ Figures don't add due to rounding.

⁵ We cannot be sure that this period is truly representative and that the average is not distorted by a few unusually high or low returns. The reliability of an estimate of the average is usually measured by its *standard error*. For example, the standard error of our estimate of the average risk premium on common stocks is 1.9%. There is a 95% chance that the true average is within plus or minus 2 standard errors of the 7.6% estimate. In other words, if you said that the true average was between 3.8 and 11.4%, you would have a 95% chance of being right. *Technical note:* The standard error of the average is equal to the standard deviation divided by the square root of the number of observations. In our case the standard deviation is 19.8%, and therefore the standard error is $19.8/\sqrt{107} = 1.9$.

⁶ This was calculated from $(1 + r)^{107} = 21,536$, which implies $r = .098$. *Technical note:* For lognormally distributed returns the annual compound return is equal to the arithmetic average return minus half the variance. For example, the annual standard deviation of returns on the U.S. market was about .20, or 20%. Variance was therefore .20², or .04. The compound annual return is $.04/2 = .02$, or 2 percentage points less than the arithmetic average.

Thus the arithmetic average of the returns correctly measures the opportunity cost of capital for investments of similar risk to Big Oil stock.⁷

The average compound annual return⁸ on Big Oil stock would be

$$(.9 \times 1.1 \times 1.3)^{1/3} - 1 = .088, \text{ or } 8.8\%,$$

which is *less* than the opportunity cost of capital. Investors would not be willing to invest in a project that offered an 8.8% expected return if they could get an expected return of 10% in the capital markets. The net present value of such a project would be

$$\text{NPV} = -100 + \frac{108.8}{1.1} = -1.1$$

Moral: If the cost of capital is estimated from historical returns or risk premiums, use arithmetic averages, not compound annual rates of return.⁹

Using Historical Evidence to Evaluate Today's Cost of Capital

Suppose there is an investment project that you *know*—don't ask how—has the same risk as Standard and Poor's Composite Index. We will say that it has the same degree of risk as the *market portfolio*, although this is speaking somewhat loosely, because the index does not include all risky securities. What rate should you use to discount this project's forecasted cash flows?

Clearly you should use the currently expected rate of return on the market portfolio; that is the return investors would forgo by investing in the proposed project. Let us call this market return r_m . One way to estimate r_m is to assume that the future will be like the past and that today's investors expect to receive the same "normal" rates of return revealed by the averages shown in Table 8.1. In this case, you would set r_m at 11.7%, the average of past market returns.

Unfortunately, this is *not* the way to do it; r_m is not likely to be stable over time. Remember that it is the sum of the risk-free interest rate r_f and a premium for risk. We know that r_f varies. For example, in 1981 the interest rate on Treasury bills was about 15%. It is difficult to believe that investors in that year were content to hold common stocks offering an expected return of only 11.7%.

If you need to estimate the return that investors expect to receive, a more sensible procedure is to take the interest rate on Treasury bills and add 7.6%, the average *risk premium* shown in Table 8.1. For example, in mid-2006 the interest rate on Treasury bills was about 5%. Adding on the average risk premium, therefore, gives

$$\begin{aligned} r_m(2006) &= r_f(2006) + \text{normal risk premium} \\ &= .05 + .076 = .126, \text{ or } 12.6\% \end{aligned}$$

⁷ You sometimes hear that the arithmetic average correctly measures the opportunity cost of capital for one-year cash flows, but not for more distant ones. Let us check. Suppose that you expect to receive a cash flow of \$121 in year 2. We know that one-year hence investors will value that cash flow by discounting at 10% (the arithmetic average of possible returns). In other words, at the end of the year they will be willing to pay $PV_1 = 121/1.10 = \$110$ for the expected cash flow. But we already know how to value an asset that pays off \$110 in year 1—just discount at the 10% opportunity cost of capital. Thus $PV_0 = PV_1/1.10 = 110/1.1 = \100 . Our example demonstrates that the arithmetic average (10% in our example) provides a correct measure of the opportunity cost of capital regardless of the timing of the cash flow.

⁸ The compound annual return is often referred to as the *geometric average* return.

⁹ Our discussion above assumed that we *knew* that the returns of -10, +10, and +30% were equally likely. For an analysis of the effect of uncertainty about the expected return see I. A. Cooper, "Arithmetic Versus Geometric Mean Estimators: Setting Discount Rates for Capital Budgeting," *European Financial Management* 2 (July 1996), pp. 157–167.

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COMMISSIONERS

JEFF HATCH-MILLER - Chairman
WILLIAM A. MUNDELL
MIKE GLEASON
KRISTIN K. MAYES
BARRY WONG

IN THE MATTER OF THE APPLICATION OF
BLACK MOUNTAIN SEWER CORPORATION,
AN ARIZONA CORPORATION, FOR A
DETERMINATION OF THE FAIR VALUE OF
ITS UTILITY PLANT AND PROPERTY AND
FOR INCREASES IN ITS RATES AND
CHARGES FOR UTILITY SERVICE BASED
THEREON.

DOCKET NO. SW-02361A-05-0657

**CLOSING BRIEF OF
COMMISSION STAFF**

Black Mountain Sewer Corporation ("Black Mountain Sewer" or the "Company") filed an application for a rate increase in the above captioned docket on September 16, 2005. The Company's current rates were authorized in Decision No. 59944, dated December 26, 1996.¹ In the test year ending December 31, 2004, the Company provided wastewater service to 1,923 customers in the Town of Carefree, in unincorporated portions of Maricopa County and in portions of the City of Scottsdale. Most of the Company's customers reside in the Town of Carefree.² On October 23, 2001, the Company changed its name from Boulders Carefree Sewer Corporation to Black Mountain Sewer Corporation.

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¹ Exhibit S-9 at 3.

² *Id.* at 2.

1 and shareholders. As a result, Staff recommends an increase of \$4,800 over the Company's initial
2 request. Accordingly, Staff recommends \$124,800 in total for rate case expenses.

3 IV. COST OF CAPITAL

4 Staff recommends a capital structure of 100% equity and 0% debt.¹⁴⁵ The Company and Staff
5 agree on capital structure. Staff's final recommended ROE is 9.6%. The Company's recommended
6 ROE is 11%.¹⁴⁶

7 Staff's recommendations use market-based financial models that have been accepted by this
8 Commission for many years. Staff uses both historical and forecasted inputs. All of Staff's inputs
9 are factors which investors can reasonably be expected to consider in determining their expected rate
10 of return. The models are also widely accepted in the financial industry and by most state
11 commissions in setting just and reasonable rates of return.

12 The Company's recommendations are based on two different constant growth DCF models
13 and one multi-stage DCF model.¹⁴⁷ The Company then selects its recommended ROE with the range
14 of results by comparing them to two different "approaches."

15 These "approaches" rely heavily on non-market based data and forecasts. The approaches are
16 the "risk premium approach" and the "comparable earnings approach." The Company requests an
17 increase in ROE to compensate for the Company's small firm size and individual business risk. The
18 Commission has repeatedly rejected these approaches, and risk premiums for small firm size and
19 individual business risk.

20 A. The Commission Should Adopt Staff's Recommended ROE Of 9.6% Because It 21 Is Based On Proven Financial Models And On Balanced And Reasonable Inputs.

22 To determine the required rate of return, Staff used the following financial models: (1) the
23 constant growth discounted cash flow ("DCF") model (9.4%); (2) the multi-stage DCF model (9.8%);
24

25 ¹⁴⁵ But see Staff Brief Schedule PMC-2. Staff calculated a downward adjustment of 50 basis points for
26 financial risk. Staff used the Hamada equation to quantify financial risk due to the Company's capital structure. Staff did
27 not recommend the downward adjustment because the Company's capital structure is reasonable. Exhibit S-5 at 2, ll. 11-
28 17. The Company has two inter-company loans that are not included in the capital structure pursuant to Decision Nos.
59944 and 60240. Staff recognizes that investors would view the loans as debt in determining capital structure. Exhibit
S-4 at 6, l. 21 - 7, l. 7. See also Staff Brief Schedule PMC-3 comparing the Company's actual capital structure with the
average for Staff's proxy water companies.

¹⁴⁶ Staff Brief Schedule PMC-1. Note that the overall rate of return ("ROR") is the same as the ROE for Staff
and the Company because of the capital structure.

¹⁴⁷ Exhibit A-1 at 40, l. 8-18.

1 and (3) the capital asset pricing model ("CAPM"). Staff used two CAPM estimates, one using an
2 historical market risk premium (10.1%), and one using a current market risk premium (8.9%). Staff
3 first calculated an average for the DCF results (9.6%); then calculated an average for the CAPM
4 results (9.5%); and finally calculated the average for both models (9.6%).¹⁴⁸ Staff's recommended
5 ROE is the average for both models.

6 For the constant growth DCF, Staff calculated the growth factor by averaging the results of
7 six different methods for calculating it.¹⁴⁹ The growth factor is the most frequently disputed input in
8 the model. Staff chose a balanced methodology that "gives equal weight to historical and projected
9 earnings per share ("EPS"), dividends per share ("DPS"), and sustainable growth."¹⁵⁰ Staff witness
10 Mr. Pedro Chaves testified that his choice of inputs "avoids the skewing that can occur by a less
11 balanced analysis such as that prepared by the Company's witness."¹⁵¹

12 Mr. Bourassa criticized Staff's choice of inputs because "individual DCF results using these
13 growth rates...produce indicated equity costs below the cost of debt."¹⁵² Apparently, Mr. Bourassa
14 expects Staff to calculate six different costs of equity using each method for calculating growth.¹⁵³
15 Then, if any result is below the cost of debt, Mr. Bourassa expects Staff to not use that particular
16 input.¹⁵⁴ Mr. Chaves testified that if the Commission adopted Mr. Bourassa's approach, it should
17 also exclude "the highest growth components to maintain a balanced outcome."¹⁵⁵ More importantly,
18 Mr. Chaves testified that it is unreasonable to assume investors ignore low outcomes and accept high
19 outcomes.¹⁵⁶

20 Mr. Bourassa also criticizes Staff's growth factor in its multi-stage DCF model. Although
21 Mr. Bourassa uses the same long term growth rate (6.8%), he criticized Staff's short term growth rate
22 because it was lower than its constant growth DCF growth factor.¹⁵⁷ Staff calculated its short term
23 growth rate using projections of dividends for each of its sample companies.¹⁵⁸ Mr. Bourassa's

24 ¹⁴⁸ See Staff Brief Schedule PMC-2.

25 ¹⁴⁹ Exhibit S-4 at 16, ll. 10-15.

26 ¹⁵⁰ Exhibit S-5 at 4, ll. 14-17.

27 ¹⁵¹ *Id.*

28 ¹⁵² Exhibit A-2 at 57, ll. 1-2.

¹⁵³ Exhibit S-5 at 5, ll. 4-12.

¹⁵⁴ Exhibit A-2 at 57, ll. 3-4.

¹⁵⁵ Exhibit S-5 at 5, ll. 12-17.

¹⁵⁶ *Id.*, ll. 10-12.

¹⁵⁷ Exhibit A-2 at 67, ll. 7-13.

¹⁵⁸ Exhibit S-4 at 25, ll. 13-17.

1 criticism is obviously result driven. Mr. Bourassa explains that "while financial models are useful,
2 they cannot be used [mechanically or] blindly."¹⁵⁹

3 However, it is Mr. Bourassa, and not Mr. Chaves, that uses professional judgment
4 inappropriately. Mr. Bourassa uses a shot gun approach. He analyzes inputs by looking at the results
5 they produce when used in financial models. He then selectively rejects and accepts inputs based on
6 his initial iteration.

7 Staff chooses its inputs by first identifying available market data. It then analyzes whether
8 investors can be expected to rely on the available data. Staff inputs are pre-selected as specified from
9 a balanced methodology. Staff does not use results to determine inputs. If inputs are selected
10 appropriately, the results speak for themselves.

11 Finally, Mr. Bourassa criticizes Staff's CAPM results because (1) its risk-free rate uses spot
12 prices for five-, seven- and ten-year intermediate U.S. Treasury securities;¹⁶⁰ (2) its results don't
13 increase in lock step with increases in interest rates;¹⁶¹ and (3) its current market risk premium
14 ("MRP") is unstable.¹⁶² The Commission has repeatedly affirmed Staff's choice of inputs for both its
15 DCF and CAPM models.¹⁶³

16 Staff also believes that the record in this case does not support a conclusion that its current
17 MRP is unstable. The MRP moves with the market which can be volatile. Market volatility does not
18 make the CAPM model unstable or subject to manipulation. The evidence in this case also shows
19 that Staff's overall results for its current MRP CAPM model did not change from its direct testimony
20 to its surrebuttal testimony.

21 In Staff's direct testimony, its risk premium was 5.7%,¹⁶⁴ and in its surrebuttal testimony, it
22 was 5.4%.¹⁶⁵ However, its overall results were 8.9% in both its direct and surrebuttal testimony

23
24 ¹⁵⁹ *Id.* at 54, ll. 20-21.

¹⁶⁰ Exhibit A-2 at 73, l. 12 - 74, l. 2.

¹⁶¹ Exhibit A-3 at 26, ll. 14-22.

¹⁶² Exhibit A-2 at 75, ll. 11-15.

26 ¹⁶³ See e.g. *In the Matter of the Application of Southwest Gas*, Docket No. G-01551A-04-0876, Decision No.
27 68487 (Feb. 23, 2006); *In the Matter of the Application of Chaparral City Water Company*, Docket W-02113A-04-0616,
28 Decision No. 68176 (Sep. 30, 2005); *In the Matter of the Application of Arizona Water Company*, Docket No. W-
01445A-02-0619, Decision No. 66849 (Mar. 19, 2004); *In the Matter of the Application of Rio Rico Utilities, Inc.*, Docket
No. WS-02676A-03-0434, Decision No. 67279 (Oct. 5, 2004); *In the Matter of the Application of Bella Vista Water Co.,
Inc.*, Docket No. W-02465A-01-0776, Decision No. 65350 (Nov. 1, 2002).

¹⁶⁴ See Exhibit S-6 (Revised Direct Testimony Schedule PMC-2).

¹⁶⁵ See Staff Brief Schedule PMC-2.

1 because the risk-free rate changed during the time interval.¹⁶⁶ Mr. Chaves also testified that the MRP
2 varies with the market which varies over time.¹⁶⁷ He explained that variability is expected because
3 the CAPM model is a market-based model.¹⁶⁸ Mr. Chaves testified that Staff uses both an historical
4 MRP and a current MRP to mitigate the market's volatility.¹⁶⁹

5 The Company introduced evidence which it implies demonstrates that the CAPM model is
6 subject to manipulation.¹⁷⁰ In Company Exhibit A-20, the Company selected a handful of dates
7 looking backward in time.¹⁷¹ The Company then calculated the current MRP that would have
8 resulted on those days.¹⁷²

9 Mr. Chaves testified that it is possible to select dates looking backward in time to support a
10 variety of positions.¹⁷³ Mr. Chaves further testified that Staff selects the dates for its inputs before the
11 date occurs. Staff's process is to select the most recent date it can before finalizing its testimony.¹⁷⁴
12 Therefore, Staff's process does not manipulate the CAPM model to achieve a specific result.

13 Next, Mr. Bourassa claims that rising interest rates do not affect Staff's cost of capital
14 analysis.¹⁷⁵ Mr. Bourassa ignores the fact that the CAPM model has three inputs which do not
15 necessarily move in the same direction at the same time. Mr. Chaves specifically testified that "there
16 is a relationship between interest rates and the cost of equity capital."¹⁷⁶ He also explained that the
17 cost of equity capital will move in the same direction as interest rates if all other variables remain the
18 same.¹⁷⁷

19 He explained that, even though interest rates increased between the time of his Direct
20 Testimony and his Surrebuttal Testimony, Staff's current MRP declined. The decline in current MRP
21 offset the increase in interest rates.¹⁷⁸ Mr. Chaves made the same comparison between his testimony
22

23 ¹⁶⁶ See footnotes 166 and 167 above.

24 ¹⁶⁷ Tr. 716, ll. 7-23.

25 ¹⁶⁸ *Id.*

26 ¹⁶⁹ *Id.* 703, l. 23 - 704, l. 1; see also *Id.* 707, ll. 9-15.

27 ¹⁷⁰ *Id.* 705, l. 12 - 707, l. 20.

28 ¹⁷¹ *Id.* 717, ll. 14-19.

¹⁷² Exhibit A-20.

¹⁷³ Tr. 717, ll. 16-19.

¹⁷⁴ *Id.* 717, ll. 3-10; and at 717, l. 22 - 719, l. 1.

¹⁷⁵ Exhibit A-3 at 26, ll. 21-22.

¹⁷⁶ Tr. 684, ll. 10-16.

¹⁷⁷ *Id.* at ll. 17-19.

¹⁷⁸ *Id.* at 719, ll. 5 to 722, ll. 18.

1 in this case and Staff's testimony in Company Exhibit A-21.¹⁷⁹ Although interest rates increased
2 from 3.3% to 4.7%, the current MRP declined from 13.1% to 5.7%.¹⁸⁰

3 **B. The Commission Should Reject The Company's Recommended ROE Of 11%**
4 **Because It Is Based On "Approaches" And Choices Of Inputs That Artificially**
5 **Inflate Required Return, And Include Premiums For Which Investors May**
6 **Eliminate Through Diversification.**

7 Mr. Bourassa testified that his recommended ROE "is based on cost of equity estimates using
8 constant growth and multi-stage growth discounted cash flow ("DCF") and is confirmed by a risk
9 premium analysis, [a comparable earnings analysis], and my review of the economic conditions
10 expected to prevail during the period in which new rates will be in effect."¹⁸¹ Mr. Bourassa testifies
11 that his DCF results must be confirmed to comply with the *Bluefield Water Works*¹⁸² and *Hope*
12 *Natural Gas*¹⁸³ decisions.¹⁸⁴ The Company also argues that Black Mountain Sewer's small size and
13 individual business risk should increase its ROE.¹⁸⁵

14 The Company's DCF results are identical to Staff's DCF results. Mr. Bourassa corrected the
15 results in his Rebuttal Testimony at the hearing. With the corrections, the average midpoint of his
16 three DCF models is 9.6%.¹⁸⁶ The Company's results could be even lower. Mr. Bourassa's DCF
17 model using EPS excluded one of his sample companies.

18 He excluded Middlesex because the "indicated cost of equity [is] only 40 basis points above
19 [the] projected cost of Baa investment grade bonds."¹⁸⁷ Mr. Chaves testified that Mr. Bourassa's
20 reason to exclude Middlesex was insufficient.¹⁸⁸ He calculated the average indicated cost of equity
21 ("COE") including Middlesex.¹⁸⁹ Without Middlesex the average was 9.7%, but with Middlesex, it is
22 9.3%. With Middlesex, the Company's overall DCF results drop from 9.6% to 9.5%.

23 In addition to the exclusion of Middlesex, the Company's results could have been lower if it
24 chose more balanced inputs. The Company only used forecasted EPS growth estimates. It excluded

25 ¹⁷⁹ *Id.* at 722, ll. 2-11.

26 ¹⁸⁰ Compare Exhibit A-21, Schedule JMR-7 to Exhibit No. S-6.

27 ¹⁸¹ Exhibit A-1 at 13, ll. 18-23.

28 ¹⁸² *Bluefield Water Works and Improvement Co. v. Public Service Commission of West Virginia*, 262 U.S. 679 (1923).

¹⁸³ *Federal Power Commission v. Hope Natural Gas*, 320 U.S. 591 (1944).

¹⁸⁴ Exhibit No. A-1 at 31, ll. 1-20 (emphasis added).

¹⁸⁵ *Id.* at 28, ll. 3-22.

¹⁸⁶ See Tr. 230, ll. 22-25; Tr. 231, ll. 106; Tr. 157, ll. 7-21; Tr. 144, ll. 16 - 145, l. 2; and Tr. 144, ll. 1-15.

¹⁸⁷ Exhibit A-3, Schedule D-4.9, footnote (b) (emphasis added).

¹⁸⁸ Tr. 712, ll. 19 to 713, ll. 17.

¹⁸⁹ Exhibit S-8.

1 historical DPS, historical EPS, and forecasted DPS. The Commission has specifically rejected the
2 Company's choice of inputs and accepted Staff's choices.¹⁹⁰

3 Mr. Bourassa uses his risk premium approach, comparable earnings approach, and the
4 Company's small size to select his final recommended ROE. His DCF results ranged from 8.5% to
5 11.0%.¹⁹¹ He selected the highest ROE in that range. The Commission has consistently rejected all
6 three approaches to inflate ROE.¹⁹² In rejecting the risk premium and comparable earnings
7 approaches, the Commission recently held that Staff's methodology of determining ROE does not
8 violate the *Bluefield Water Works* or the *Hope Natural Gas* decisions.¹⁹³

9 RESPECTFULLY Submitted this 21st day of August 2006,
10
11

12 *David Ronald for*
13 Keith A. Layton, Attorney
14 Legal Division
15 Arizona Corporation Commission
16 1200 West Washington Street
17 Phoenix, Arizona 85007
18 Attorney for Staff

17 Original and thirteen copies filed
18 this 21st day of August, 2006 with:

19 Docket Control
20 Arizona Corporation Commission
21 1200 West Washington Street
22 Phoenix, Arizona 85007

23 Copies of the foregoing were mailed
24 on this 21st day of August, 2006 to:

25 Jay Shapiro
26 Patrick J. Black
27 Fennemore Craig, P.C.
28 3003 North Central Avenue, Suite 2600
Phoenix, Arizona 85012
Attorneys for Black Mountain Sewer Corporation

¹⁹⁰ See footnote 165, *supra*.

¹⁹¹ Exhibit No. A-3 at 22, ll. 11 to 23, ll. 2.

¹⁹² See footnote 165, *supra*.

¹⁹³ *In the Matter of the Application of Southwest Gas*, Docket No. G-01551A-04-0876, Decision No. 68487 (Feb. 23, 2006).

D

BEFORE THE ARIZONA CORPORATION COMMISSION

JEFF HATCH-MILLER

Chairman

WILLIAM A. MUNDELL

Commissioner

MARC SPITZER

Commissioner

MIKE GLEASON

Commissioner

KRISTIN K. MAYES

Commissioner

**IN THE MATTER OF THE APPLICATION OF
ARIZONA WATER COMPANY, AN ARIZONA
CORPORATION, FOR ADJUSTMENTS TO ITS
RATES AND CHARGES FOR UTILITY SERVICE
FURNISHED BY ITS WESTERN GROUP AND
FOR CERTAIN RELATED APPROVALS.**

DOCKET NO. W-01445A-04-0650

STAFFS' REPLY BRIEF

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1 **V. Cost of Capital.**

2 **A. Arizona Water's comparable earnings approach must be rejected.**

3 Surprisingly, Arizona Water suggests that the Commission should go back to the long-
4 discredited "comparable earnings" approach. Professor Phillips, whose treatise Arizona Water
5 cites, states that the "most difficult problem in applying the comparable earnings standard is the
6 determination of relative risk" because "there is no accepted method of measuring relative risk."
7 Charles F. Phillips, Jr., *The Regulation of Public Utilities* at 398 (3rd ed. 1993). Further, Arizona
8 Water argues that the sample group for a comparable earnings analysis should be other water
9 companies. As Professor Bonbright explains, this creates an obvious logical flaw:

10 If the comparable earnings test is applied in the traditional manner is limited to
11 utilities, it frequently is challenged on the basis of circularity. The return on
12 book equity of utilities is itself influenced by the regulatory process, setting the
13 allowed return of a particular utility on the bases of the earned returns of other
14 utilities makes that return dependent on regulatory action. The return set for one
15 utility becomes part of the return set for another utility, and so on. Essentially,
16 this circumvents the market forces which regulation is attempting insofar as
17 possible to replicate. (James C. Bonbright, et al, *Principles of Public Utility*
18 *Rates* at 329-30 (2nd ed. 1988).

19 Newer methods – like the CAPM and DCF models – use market data rather than data influenced
20 by other regulatory decisions. Staff strongly supports the use of market based models, because the
21 cost of equity is set by the market, not regulatory commissions. (Ex. S-6 at 53:2-3). Staff does not
22 believe that it is appropriate to "circumvent" the market in the manner suggested by Arizona Water.

23 For these reasons, the Arizona Court of Appeals strongly criticized the use of utilities as the
24 sample group in a comparable earnings analysis. See *Sun City Water Co. v. Arizona Corp.*
25 *Comm'n*, 26 Ariz. App. 304, 310-311, 547 P.2d 1104 (1976). But in the end, the Supreme Court
26 ruled that the Commission was within its constitutional powers to consider such a group. *Sun City*
27 *Water Co. v. Arizona Corp. Comm'n*, 113 Ariz. 464, 556 P.2d 1126 (1976). Thus, while the
28 Commission could lawfully adopt Arizona Water's approach, it is not a good idea.

29 **B. Staff's use of historic growth is appropriate.**

30 Arizona Water attacks the Staff's use of historic growth in Staff's DCF models. Arizona
31 Water relies on data presented in "Brief Exhibit 2". This Exhibit was never placed in evidence,
32 and it should not be considered. The alternative to using historic growth is using analyst forecasts.